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Selected characteristics and achievements of reverse transfer students in the Iowa Area Community Colleges and Vocational-Technical Schools

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Selected characteristics and achievements of reverse transfer students in the Iowa Area Community Colleges and Vocational-Technical Schools

by

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THE PROBLEM

Introduction

Iowa's educational problems, although somewhat the same as those of the rest of the nation, are complicated in that the people of the state are about evenly divided, agrarian and urban, with comparatively few large concentrations of population.

The group of students that first attend a college or university directly from high school and later, for one reason or another transfer to an area school (reverse transfer students), provides a field of study which has been largely neglected. The number of students involved in this group is surprisingly large. Kuznik's (53), study in 1969 was based on 267 reverse transfer students. These figures rose rapidly as the merged Iowa area schools developed. So-called reverse transfers numbered 741 in 1970, and increased 981 in 1971 to 1845 in 1973.

A study of the characteristics and achievements of these students, accompanied by a look at matters of national and state concern, should enable educators to widen their perspective. Also awareness of the contemporary forces affecting higher education should enable educational planners to be realistic as they appraise the student and his needs.

Lyman Glenny (55) discussing "Pressures on Higher Education" emphasized two types of pressures: those caused by government and those resulting from natural forces. He put the emphasis on those pressures which are unplanned and largely unrecognized and not controlled by society. Glenny states:

> . . . with the exception of a few states, the proportion of the state budget going to higher education will be no greater in 1980 than it is now--whether we have boom times or bad, Republicans or Democrats in office.

He further proposes that:

> financing of higher education has to be reevaluated because of a number of factors, namely, the establishment of a new set of social priorities. Priorities in higher education have dropped below those of energy use, health care and recreation. (35, pp. 1-5)

There are other areas of change. Faculty members are moving towards collective bargaining. There is a shift towards occupational and career training. There are more students starting school, dropping out, and then reentering at a later date. These changes all call for extensive readjustment and realignment in higher education or post-high school education.

The Carnegie report, "New Students and New Places," (10) states many of the same concerns, such as the predictions of future enrollments. This factor is becoming more uncertain. The report continues:

> . . . looking backwards, what happened was predictable--a steady increase. Looking forward there are these new uncertainties. . . .
>
> Financial stringency - at least through the 1970's and as great as ever in history. . . .
>
> Labor market conditions - 80 percent of jobs do not require a college degree, yet 65 percent of young people may soon at least enter higher education. . . .
>
> The cultural revolution - a great unknown. More young people are now seeking vocations or life styles outside the Horatio Alger syndrome than ever before. How far will this go? Higher education is built on the work ethic and we may now be shifting to a more sensate culture.
>
> The birth rate now fluctuates tremendously as compared with historical standards. Recently it has gone down dramatically.

Will it keep going down, or stabilize, or rise again?

> The loosening of educational structures - one clear change now going on is to allow students to stop out more from education after high school, and adults to stop in more than ever before. How will the stop-outs and stop-ins balance each other?
>
> The new technology has introduced slides, tapes, computers, video cassettes. All allow education to be greatly dispersed, taking the best and most recent knowledge into what were once remote and isolated colleges, into factories, and offices, and into homes. Every living room can soon be a classroom. . . .
>
> Public policy is now in a period of reassessment after one century of strong support for higher education. How much aid will there be in the future for students and how much for institutions, with obvious impacts on growth? (10, pp. 3-4)

Klutznick and Bower (16), Co-Chairmen of the Committee for Economic Development, in the publication, "The Management and Financing of Colleges," succinctly summarizes the current status of higher education:

> The era of campus violence seems to have passed. Students are no longer locking up administrators, burning buildings, or engaging in strikes; but the crisis in higher education is not over. Many colleges and universities are in financial trouble. Many students are still dissatisfied with some aspects of higher education. Professional pride is not keeping faculty members from joining unions.
>
> Society, meanwhile, is reassessing the values of a college education. There is skepticism because a college degree is no longer ready assurance of a job. There is also evidence of reordering the place of higher education in the scale of national priorities as legislators question expenditures for this purpose. Yet, the public still regards colleges and universities and major instruments for improving the quality of life and for preserving the essential features of the kind of society it wants to have. (16, p. 7)

These problems are national in scope with Iowa no exception to the norm. Enrollment projections for the state of Iowa, conducted by Midwest Research Institute for the Iowa Higher Education Facilities Commission, indicate a decline in college population taking place from the

present time to 1985. This decline is in keeping with trends being predicted nationally. The bulk of the student decline appears to affect the private colleges and private universities (33 percent loss) more than the public institutions. The enrollment for the area community colleges was projected to increase 25.4 percent, from 25,323 students to 31,756 students in 1985 (66). The Committee on Economic Development Report also predicted a drop in enrollment during the 1970s; however, the drop in Iowa has occurred sooner and sharper than expected. The report also predicted a modest increase in community college enrollments. This appears to be true in Iowa, and nationally only for area community colleges located in large population centers. Retrenchment of staff in the arts and sciences division has become necessary in a number of the not-so-small community colleges. So, attrition not only becomes a matter of concern but also a matter of survival for many faculties, and possibly for many institutions unless other segments of the population are brought into the mainstream.

A knowledge of the development of the area schools is necessary to an understanding of problems peculiar to Iowa. It is also necessary to understand the legislative intent that they be comprehensive institutions.

This historical review is confined to Iowa area schools and their development. The historical development of the junior-community college movement in the United States has been reviewed in detail by a number of studies. Two good examples of these are Ray S. Henry, Jr.'s "Study of Academic Behavior of Students Who Transferred from a Baccalaureate College to a Community College" (39) and a study by Fields, "The

Table 1. Births per 1000 women 15-44 years old and expected year and numbers of possible college students (35)

Year of birthday	Birth per 1000	Expected year of college entrance
1953	112	1971 (18 year olds)
1954	115	1972
1955	124	1973
1956	130	1974
1957	126	1975
1958	121	1976
1959	122	1977
1960	122	1978
1961	122	1979
1962	119	1980
1963	116	1981
1964	112	1982
1965	101	1983
1966	97	1984
1967	72	1985
1968	90	1986
1969	90	1987
1970	89	1988
1971	85	1989
1972	75	1990

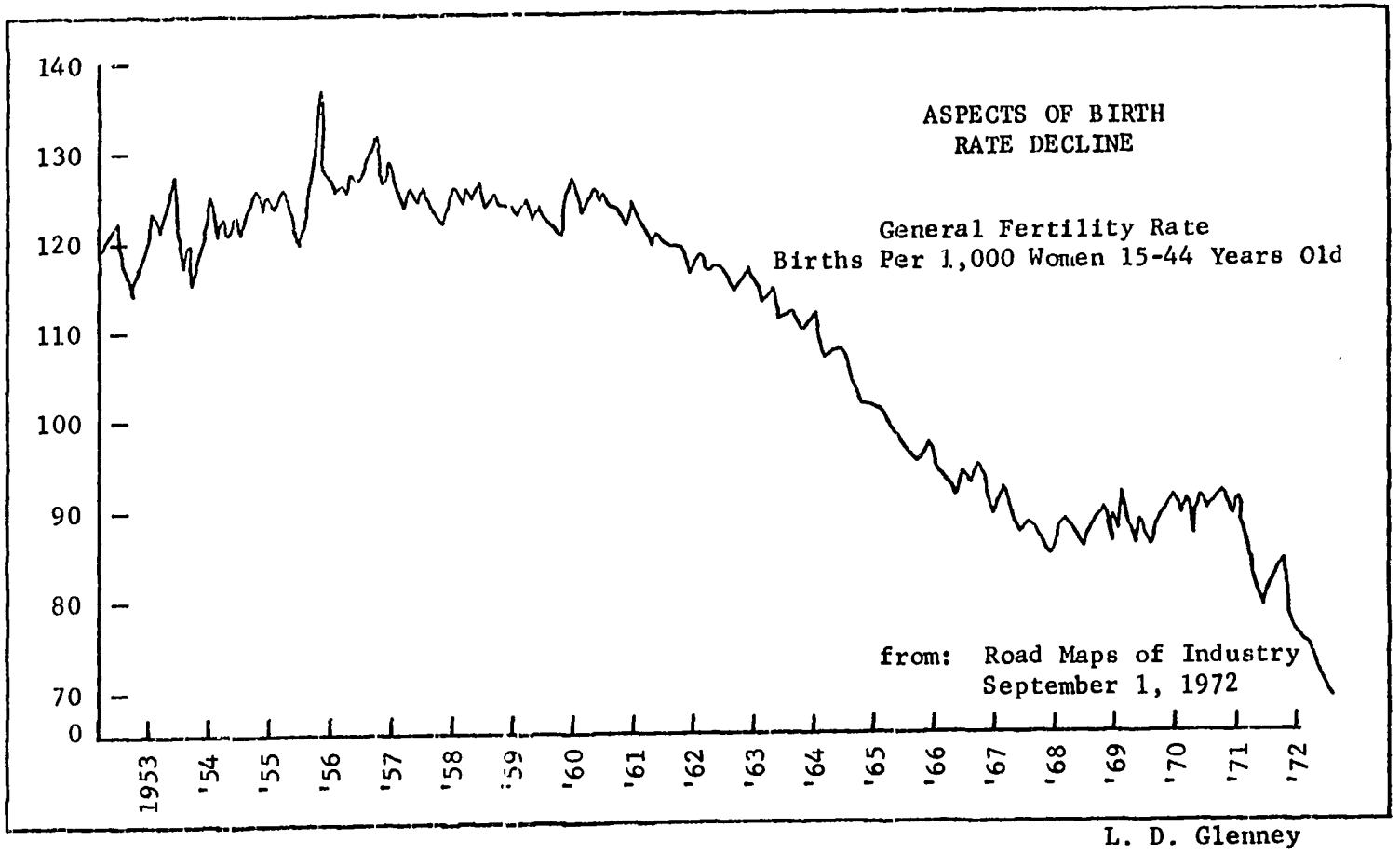

Figure 1. Aspects of birth rate decline: General fertility rate births per 1000 women 15-44 years old (35)

Community College Movement" (25).

The history of the Iowa public junior-community college development differs in only a few points from that of other states. Mason City established the first junior college in 1918, without having a specific legal basis. Legislation authorizing the local school district to establish a junior college was passed in 1927. Approval to start a college had to be given by the State Superintendent of Public Instruction, and duly authorized by the voters of the district.

Thirty-six public junior colleges were started between the years 1918 and 1953. These institutions were characterized by small staffs, small enrollments and dual use of high school facilities and staff. Medsker reported on Iowa's junior and community college:

> Long known as a state with many small junior colleges, Iowa has to cope with the problem of providing junior college education in an agricultural state with relatively few heavily populated areas. (63, p. 231)

He sums up the need for a statewide look at the financial and organizational structure of the junior-community colleges by stating:

> Iowa is over one hurdle with increased state aid, but there is still no aid for capital outlay and hence no real encouragement for districts to establish junior colleges or to acquire facilities for them. The problem of size still remains and must soon be studied if the state is to realize a legitimate return in its investment in these institutions. (63, p. 234)

These needs had become increasingly clear to Iowans and were reflected in a number of informal and formal reports designed to promote new structures of post-high school education in Iowa (85, 31, 44, 45).

These reports differed in detail, but they all pointed to the

Table 2. Growth of public junior colleges in Iowa 1918 - 1953

No.	Town	Date established	Closed	Reopened	Closed
1	Mason City	1918	--	--	--
2	Burlington	1920	--	--	--
3	Fort Dodge	1921	--	--	--
4	Grundy Center	1921	1929	--	--
5	Red Oak	1922	1943	1945	1951
6	Clarinda	1923	1943	1946	--
7	Waukon	1923	1948	--	--
8	Estherville	1924	--	--	--
9	Sheldon	1926	1943	1945	1951
10	Creston	1926	--	--	--
11	Washington	1926	1943	1946	1951
12	Webster City	1926	1943	1946	--
13	Albia	1927	1943	--	--
14	Boone	1927	--	--	--
15	Britt	1927	1943	1947	1951
16	Chariton	1927	1943	--	--
17	Cresco	1927	1929	--	--
18	Marshalltown	1927	--	--	--
19	Osceola	1927	1943	--	--
20	Sioux City[a]	1927	1928	--	--

[a]Record is not clear as to whether the Sioux City Junior College was a public junior college (46).

Table 2 (Continued)

No.	Town	Date established	Closed	Reopened	Closed
21	Tipton	1927	1943	--	--
22	Maquoketa	1927	1943	--	--
23	Bloomfield	1928	1943	1945	1949
24	Eagle Grove	1928	1943	1945	--
25	Earlham	1928	1931	--	--
26	Independence	1928	1943	--	--
27	Manchester	1928	1929	--	--
28	Clarion	1929	1930	--	--
29	Ellsworth	1929	--	--	--
30	Elkader	1929	1948	--	--
31	Muscatine	1929	--	--	--
32	Centerville	1930	1944	1945	--
33	Emmetsburg	1930	1943	1945	--
34	Clinton	1946	--	--	--
35	Perry	1947	1948	--	--
36	Keokuk	1953	--	--	--

No new public junior colleges have opened in Iowa since 1953.

following conclusions:

1. The need for a state plan to serve all areas of Iowa.
2. The need for an adequate financial base to support a varied program of instruction.
3. The need for an adequate number of potential students to be served in each area.

The Iowa General Assembly in 1965 enacted enabling legislation for establishing a statewide system of not more than sixteen merged area vocational schools or community colleges. This permissive legislation made vocational education a must in that an area community college cannot exist without including vocational-technical offerings.

"Thus, the legislature, speaking for the people of Iowa, has forced the parallel movements of college transfer education and vocational-technical into a single stream" (71).

Specifically the legislature provided direction by stating:

> The Code of Iowa directs that it is the policy of the state to provide for the establishment of not more than sixteen merged areas which shall include all of the state and which may operate either area vocational schools or area community colleges. These institutions shall offer to the greatest extent possible educational opportunities and services, when applicable, in each of the following, but not necessarily limited to:
>
> 1. The first two years of college work including pre-professional education.
> 2. Vocational and technical education.
> 3. Programs for inservice training and retraining of workers.
> 4. Programs for high school completion for students of post-high school age.
> 5. Programs for selected high school students in vocational-technical education.

6. Student personnel services.
7. Community services.
8. Vocational education for persons who have academic, socio-economic, or other handicaps.
9. Training, retraining, and all necessary preparation for productive employment of all citizens.
10. Vocational and technical training for persons who are not enrolled in a high school and who have not completed high school. (43, pp. 2-3)

Recent growth in the state

A statewide system of public area community colleges and vocational-technical schools has been developed in Iowa since permissive legislation was enacted in 1965.

The 1965 legislature placed the major responsibility for initiating the area community college and area vocational-technical schools with the County Boards of Education and the State Board of Public Instruction. By July, 1967, fifteen area schools were organized. Four of the schools were developed as vocational-technical schools and eleven evolved as community colleges. The eleven community college areas have assimilated all of the existing local public community and junior colleges as a part of the area organization.

There are presently over 100 vocational-technical occupational choices offered in the 15 area schools. There are over 250 different programs available in contrast to the 25 post-high school vocational programs offered in 1965-66.

Adult Education programs have shown a significant increase in the number of people served. The programs in adult basic education, high school completion, vocational-technical, and general adult programs have

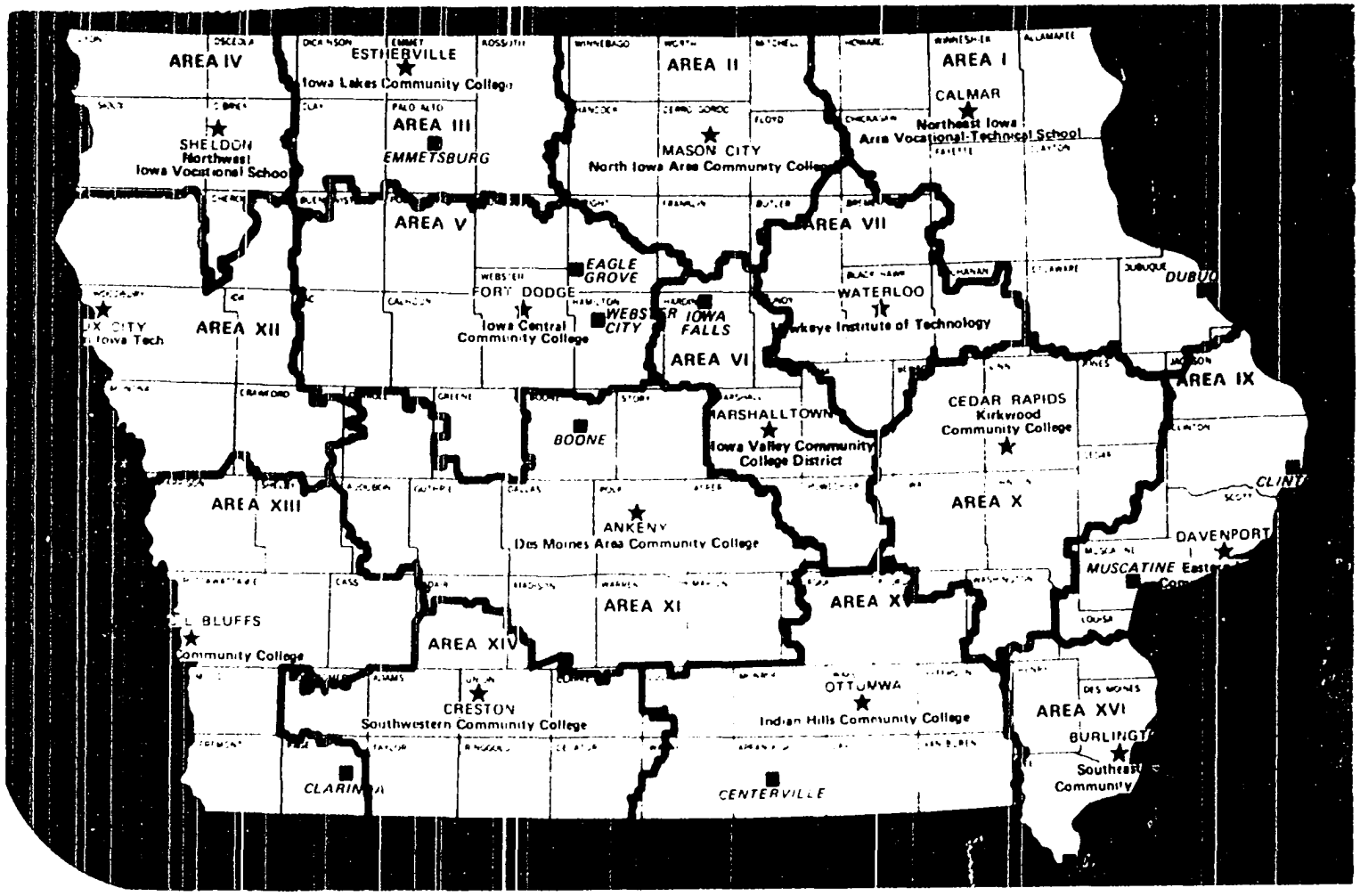

Figure 2. Merged area schools

helped to demonstrate the contributions an area school can make to the adults in the area.

Full-time equivalent enrollment in the vocational-technical and arts and science programs has increased from 11,500 in 1965, to about 21,000 at the present time. In a study performed for the Higher Education Facilities Commission, it was estimated that there would be a full-time student equivalency of 31,275 students in 1970 and 61,225 students by 1980 (67).

The original legislation was revised in 1967 by the 62nd General Assembly. The more important changes were: 1) Area Boards of Education were required to submit their budget by June 1 to the State Board of Public Instruction for approval; 2) Provisions were made to provide for appropriation of monies to enable the area schools to receive their state aid on a current basis.

In 1969, the 63rd General Assembly appropriated a fixed amount of general aid for each area school based on an estimate of 1969-70 enrollment. A new formula was developed to be used for distributing aid in 1971-72. The distribution percentages reflect the legislature's orientation towards the need for vocational-technical education.

The General Assembly required the initiation of a new financial accounting system for the area schools which designates four basic funds: Arts and Science, Vocational-Technical, Adult Education, and Services. Under this ruling, funds may be transferred from one area to another with the approval of the State Superintendent of Public Instruction.

Acceptance of the area schools

The position paper developed by the State Department of Public Instruction for the Iowa Coordinating Council on Post-High School Education on Iowa's Developing Patterns for Area Schools sums up popular acceptance of the area school as follows:

> . . . the fact that the people in 92[1] of Iowa's 99 counties have initiated, established, and supported these schools, and the fact that potentially over 50,000 people this year will take advantage of the educational opportunities provided by these institutions cannot be disregarded. There may be problems to iron out, but with such enthusiastic support from the people of Iowa, and the desire of those responsible to improve this new system of post-high school education, the direction, most certainly, will be forward. (43, p. 80)

Purpose of the Study

The development of the area schools has made it possible to offer a comprehensive community college program to students based on their needs, desires and abilities. The Open Door Policy of the area community college requires that these doors remain open, not only for initial post-high school educational opportunities, but for second, and if needed subsequent chances to develop the students' full potential (43). There is a lack of information about the student who enters a four-year college, or other post-high school institution, and then decides to transfer to an area community college or vocational-technical school. Specifically, it is the purpose of this study to:

1. Describe the characteristics and achievements of the reverse transfer students.

[1]Now includes all 99 counties.

2. Determine if there are any significant differences between the reverse transfer students entering a vocational program and those entering an arts and sciences program.
3. Determine if there are any significant differences between the reverse transfer students entering vocational-technical programs and the native students entering vocational-technical programs.
4. Determine if there are significant differences between the reverse transfer students entering arts and sciences programs and the native students entering the arts and sciences programs.
5. Assess the redirecting function of the area schools.
6. Investigate the characteristics and achievements of the students who reverse transferred to determine the probability of predicting successful completion of a program or graduation.

Need for the Study

There is an urgent need to learn more about the characteristics and achievments of the reverse transfer students attending Iowa Community Colleges. This student group has experienced an increase in numbers from 741 students in 1970 to 1845 students in 1973. This study of these individuals should lead to a better understanding of their characteristics and achievements. The college offerings must be geared to the needs of the people it is trying to serve. Medsker emphasizes this democratic aspect of education as he defines the role of the community college.

> . . . as designed to play a special and strategic role in American Higher Education. This it does in a variety of ways. It is perhaps the most effective democratizing agent in higher education. It decentralizes post-high school opportunities by placing them within reach of a large number of students. It makes higher education available at low cost to the student and at moderate cost to society. It offers a wide range of educational programs not found in other colleges. (63, p. 4)

The character of today's schools is dramatically changing, if one would believe the zero population birth rate, the leveling off of funding, the career orientation of students and society, the recognition of nontraditional education, the "in and out" registration of students, the competition of private proprietary schools, and the drop in enrollments in the liberal arts areas. If one will recognize that this is the state of the educational nation then one must also recognize the necessity to know more about the student so as to be responsive to his needs. The scope of these changes charges educators to learn more about the social and cultural aspects of the student's makeup as well as his academic needs and achievements. McConnell indicates that we must understand students more fully and have clearer ideas about the college experiences which will be most fruitful for them. Many will make false starts and find it necessary to change directions. He further states that:

> Within the present limits of our knowledge about the fit between students and institutions, it would be indefensible, even in a coordinated and differentiated system, to assign a student once and for all to a particular institution or a specific curriculum. The system must be flexible enough to enable each student to reach the highest level for which his aptitude and performance qualify him. (58, p. 190)

Null Hypotheses of the Study

Iowa's system of area community colleges enhances the flexibility McConnell considers necessary so that each student may take advantage of his abilities and interests. In keeping with this comprehensive approach, the following hypotheses in null form are proposed. They should validate some of the important comparisons necessary to enable counselors and others to recognize and to identify the characteristics and achievements of the reverse transfer group so they may better serve the students.

Null Hypotheses One: There is no significant difference in the group means between the reverse transfer students and the native students as measured by the variables as indicated in Table 82.

Null Hypotheses Two: There is no significant difference in the group means between the reverse transfer students entering vocational-technical programs or those entering the arts and sciences programs as measured by the variables as indicated in Table 83.

Null Hypotheses Three: There is no significant difference in the group means between the reverse transfer students entering vocational-technical programs or the native students entering vocational-technical programs as measured by the variables as indicated in Table 84.

Null Hypotheses Four: There is no significant difference in the group means between the reverse transfer students entering the arts and sciences program or the native students entering arts and sciences

programs as measured by the variables as indicated in Table 85.

Assumptions

Characteristics and achievements

The scope of this investigation included the fifteen merged Iowa area schools. The random samples drawn are representative of those reverse transfer and native students enrolling in the Iowa area schools for 1971-72.

Delimitations

This study is limited to the enrollment of first-time students and students reverse transferring to an Iowa area school during the 1971-72 school year.

Student characteristics were obtained through a process of self-reporting.

Data on student achievement were taken from official files and records by the registrars of the various schools and could be subject to errors in transmittal. Unavailable data such as a transcript not being required when transferring from a college to a vocational-technical program, a marriage changing a maiden name or American College Tests being optional at some schools.

Definitions

Definitions from the Iowa Code are used because they are basic to the understanding of the direction of the development of area schools in Iowa. The code provides that:

1. "Vocational school" a publicly supported school which offers as its curriculum or part of its curriculum vocational or technical education, training, or retraining available to persons who have completed or left high school and are preparing to enter the labor market; persons who are attending high school who will benefit from such education or training but who do not have the necessary facilities available in the local high schools; persons who have entered the labor market but are in need of upgrading or learning skills; and persons who due to academic, socio-economic, or other handicaps are prevented from succeeding in regular vocational or technical education programs.

2. "Community college" a publicly supported school which offers two years of liberal arts, pre-professional, or other instruction partially fulfilling the requirements for a baccalaureate degree but which does not confer any baccalaureate degree and which offers in whole or in part the curriculum of a vocational school.

3. "Area vocational school" a vocational school established and operated by a merged area.

4. "Area community college" a community college established and operated by a merged area. (43, p. 3)

Definitions: Not from the Iowa Code.

5. Reverse transfer student is a student who enrolled in a senior college or other post-high school institution directly from high school and who transferred to an area community college.

6. Full-time student is a student enrolled in twelve credit hours or more.

7. Arts and sciences program refers to a two-year program designed to complete the first two years of a four-year college program. This is sometimes called a college parallel or a college transfer program. Graduates receive an Associate of Arts degree.

8. Vocational programs refers to programs of varied length with emphasis on a specific area for immediate job-entry, job upgrading, or job-retraining.
9. Technical programs refers to a two-year program with an emphasis on science and technology applied to a highly specialized area.
10. Area school designates an area community college unless otherwise indicated since 13 of the 15 area schools have been designated area community colleges.

REVIEW OF RELATED LITERATURE

Articulation and the Transfer Student

Understanding the characteristics and achievements of the two-year college student is necessary when working with a four-year institution to smooth the process of articulation between institutions. Medsker indicates that:

> The whole concept of articulation is a broad one . . . and we must consider how two- and four-year colleges, individually and collectively, can work together to make smooth the avenues of those students who will attend both types of institutions. Articulation cannot be left to chance. Knowledge about and appreciation of the type of institution other than that in which one is working are indispensable--and it is a two-way street. (61, pp. 114-121)

It is no secret that institutions vary in the emphasis they put on academics and the general college environment. McConnell (58) concurs that a diversified system of higher education is needed so that each student will be able to find the college, the curriculum, and the student and faculty associations which will enable him to realize most fully his potentials.

The community college takes its place in this diversified system and attempts to serve the educational needs of the groups in the community it plans to serve. To do this the community college must have a clear, unsentimental, factual understanding of its students so the instructors may adapt their methods to the facts of student abilities and purposes.

T. R. McConnell in the foreword to "From Junior College to Senior College" pointed out that,

> the national study by Knoell and Medsker involved some 10,000 students, 345 two-year institutions which they entered as freshmen, and a diverse group of forty-three senior colleges and universities to which they transferred.

In this study McConnell indicated that, "the prediction of success of the transfer student turned out to be a complicated problem." He further states . . .

> . . . The success of the transfer student was a function of his characteristics, the range of alternatives open to him when he chose a senior institution, the academic standards and the total climate of the senior college to which he transferred, and the interaction between the characteristics of the student and the institution. (58, p. VI)

The "two-way street" previously referred to by Medsker includes the necessity to understand and appreciate the two-year junior and community colleges. James B. Conant in the foreword to "The Open Door College" states:

> The extension of free education through the establishment of local two-year community colleges has been the expression of a new social policy of the nation. Or perhaps I should say a farther thrust of an old policy. For one could simplify the listing of American public education in the last hundred years by noting the steps in the movement to make universal the opportunities hitherto open only to the well-to-do. First came the provision of elementary schooling at public expense, then came the free high schools and efforts to provide instruction for a wide variety of talents (the comprehensive four-year high school); lastly the growth of the equally comprehensive public two-year colleges, the open-door college, as it has sometimes been called. (11)

In the report, "The Open Door College," the Carnegie Commission discusses the makeup and advantages of this type of institution.

> Among the explanations for the rapid advance of the community colleges are their open admission policies, their geographic distribution in many states and their unusually low tuition policies. They offer more varied programs for a greater variety of students than any other segment of higher education. They

> provide a chance for many who are not fully committed in advance to a four-year college career to try out higher education without great risks of time or money. They appeal to students who are undecided about their future careers and unprepared to choose a field of specialization. And, last but by no means least, they provide an opportunity for continuing education to working adults seeking to upgrade their skill and training. (11, p. 3)

Knoell and Medsker summarized their study "From Junior College to Senior College" by stating that:

> . . . much of the variability in personal characteristics which was anticipated in the transfer student group simply was not found. As the junior college freshmen class is almost indistinguishable from the high school graduating class, so is the junior college transfer group like the native student population found in the four-year college. The transfer students were mostly white, Protestant, of native-born parentage, and under twenty-one years of age when they entered the senior institutions. There were many more men than women in the transfer group. The high school record of the men was not as good as that of the women. However, a majority of both groups took a general or college preparatory program in high school and graduated in the upper half of their class. (51, p. 18)

They state that economic factors played a major role in the decision of transfer students to attend a two-year college. The transfer students indicated that on the whole they were very well satisfied with their experience in junior college.

Knoell and Medsker further concluded that:

1. The transfer students tended to give somewhat negative reasons for attending a junior college.

2. The graduates who began their work in a university as freshmen tended to have more academic aptitude and a greater readiness to undertake college work than those who entered a two-year college.

3. The junior college student most likely to succeed in a four-year institution was found to be one who performed well both in high school and junior college.

4. Economic factors played a major part in the attrition of the transfer students. Many had transferred without a satisfactory plan for meeting their expenses at the four-year institutions.

5. The area in which the most significant changes occurred during the course of the study was that of articulation and coordination among the two- and four-year institutions. Impetus for both articulation and coordination came from the increased demands for higher education. (51, pp. 18-23)

Willingham and Finikyan conducted a study of two-year transfer students. They state:

1. Our data indicate that students transferring from the two year institutions have almost the same average college grades as students coming from four-year institutions.

2. . . . few junior college students who have followed an occupational program attempt to transfer to a four-year institution. Of those who do few succeed.

3. The previous college grade average is easily the principle gatekeeper . . . well over 100,000 students annually attempt to move from one institution to another with less than a C average. Three out of four are rejected.

4. It is well-known that poor college grades are all too frequently a result of poor college choice, but as the transfer applicants previous average slips below this arbitrary line his chances of admission drop precipitously from 70 percent to 25 percent. (92, pp. 4-12.

Berger (5) states, "Students should be encouraged to consider any early decision as tentative, a choice to be tested, confirmed or disconfirmed."

Reverse Transfer Students

The foregoing studies set forth the open-door policy and emphasize institutional differences. They point up the differences in students and institutions and declare the necessity for knowing the characteristics and achievements of the student body: Thereby they set the stage

for a view of the reverse transfer student. Very little literature has been available regarding this area of the student body.

Henry in researching this area states:

> In a span of years from 1958-1967, none of the articles listed in the Education Index which pertained to community college transfer studies were concerned with the student who began his higher education experience in a four-year institution. In a publication covering doctoral dissertations dealing with junior college from 1918-1963, nineteen studies were listed which related to transfer, but none of these isolated for special consideration the student who began in the baccalaureate institution. Moreover in a publication of doctoral dissertation studies for 1964-1966 pertaining to the transfer program there was no indication that any of the studies sought to make a distinction between the student who began in the two-year college and the student who began in the four-year college. (39, pp. 83-84)

An ERIC (Educational Research Information Center) search based on input descriptors, academic probation, admission criteria, junior colleges, transfer students, and low achievers was made using a computer that searched 50,219 documents with only 69 "hits" or studies relating to the input descriptors. These studies dealt basically with transfer from the junior or community college to a four-year college.

Another ERIC search was based on input descriptors, junior colleges, community colleges, terminal education, incoming transfer students, transfer students, academic failure, and academic probation. The computer search based on these input descriptors searched 40,747 documents with 100 "hits." Again these studies were basically concerned with the transfer of students from the two-year college to the four-year college.

The final ERIC search was through 49,783 journal articles with 12 "hits"; a repeat of the first two runs insomuch as they indicated a dearth of studies relating to this area.

A Xerox service, Direct Access to Reference Information (DATRIX), was used to obtain up-to-date information on dissertations written in the community and junior college field using as key words transfer students, reverse transfer, new students and articulation. Information was available on dissertations published by University Microfilms through the middle of 1973. Thirty-six "hits" were listed. A few of these studies had to do with the student who reverse transferred to a four-year college. However, these studies were basically oriented to reverse transferal because of low academic records. Winstead (93) discussed factors related to academic careers of students who had transferred from senior colleges to two junior colleges in California. Winstead's basic concern was for the effectiveness of the junior college in salvaging senior college students who for diverse reasons either changed direction in the pursuit of their original academic goals, or changed their goals. He states,

> the situation offers a challenge to educators because a great number of students first admitted to senior colleges with above-average high school academic records and demonstrated potential for college achievement have failed to live up to their potential.

Among Winstead's conclusions were:

1. The reverse-transferees were for the most part economically, socially, and educationally advantaged young people. They were bright, highly motivated, and relatively high achievers with better than average capabilities.

2. Reverse-transferees were highly conscious of the relative academic prestige of the school they wished to attend and perhaps were over-motivated by this consideration.

3. . . . the reverse-transfer group tended to gravitate first toward institutions of higher learning somewhat consistent with the relative prestige of specific paternal occupations,

paternal incomes, and paternal and maternal educational backgrounds.

4. Reverse-transferees did far better in junior college course work than they did in their senior college courses. (93, p. 233)

Tillery (89) in investigating the characteristics of entering freshmen at the University of California and their peers at California Junior Colleges states that:

> Diversity of student characteristics within and among institutions is clearly shown by this investigation. In most characteristics the University students are significantly different from their peers who selected a junior college. Furthermore, differences were found when comparing freshmen at the several campuses of the University of California. (89, p. 297)

He concludes:

> In general, the junior college freshmen are less well prepared academically, less mature socially, and less intellectually motivated than their University peers. Furthermore, most junior college freshmen came from families with modest incomes and relatively low occupational and educational status. Although most University students say they chose the university for its academic features, most junior college students say they came for convenience or low cost. Nevertheless, like their university peers, they think they made wise decisions and in general they like their colleges. (89, p. 297)

Cross (20) states that "We must conclude that intellectual dimensions sharply differentiate junior college students, as a group, from senior college students" (20, p. 42)

Meadows and Ingle (60) discuss reverse articulation as a unique function of the junior college. They point out the frustrations of students who are ineligible to return to their prior institution and who desire to transfer to other colleges. They conclude in general:

> The doors to another college are usually closed to these students who do not possess that typical criterion for admission of the transfer student--a "C" average at the institution previously attended.

They also indicate that a growing number of personnel in higher education are beginning to recognize the plight of the student with an unsatisfactory academic record who wishes to transfer. Meadows and Ingle found that those who advocate a second chance in the junior college for students who have had a failure experience at the original college are supported by a number of the following logical factors, especially in the case of the senior college transfers.

1. Many of these students are seeking to transfer from prestigious, selective senior colleges. As a rule, they possess better academic aptitude than the student who begins his college work at the junior college.

2. Usually the transfer student ineligible to return to his prior institution is admitted to the junior college on probation. There is some evidence to suggest that this action is a motivating factor for the student, especially when this is accompanied by counseling.

3. The junior college is frequently smaller and less impersonal than the large universities from which many of the transfers come. Also, the junior colleges are noted for their emphasis on counseling and personnel services. Presumably, the transfer student would be more likely to "find himself" in such an environment.

4. The change in college is accompanied by a corresponding change in educational and career plans for many transfers. Frequently the change is toward objectives more consonant with aptitudes and interests and improvement may be expected in such cases.

5. Usually, the transfer student has the benefit of what he has learned at the previous college and thus is more knowledgeable about what to expect from college. This prior experience should equip him better for academic survival. (60, pp. 47-54)

McKibben (59) has stated: "Human talent is probably our greatest resource; yet our system of recording academic failure and insisting on penance for that failure has severely limited the use of that talent."

Simon (83) proposed that the junior college function is one of

assisting the individual to resolve the conflict between his aspirations and his achievement.

Kuznik studied reverse transfer students who had academic difficulties while they attended the University of Iowa and reverse transferred to Iowa public community colleges. He found they lacked counseling at the university and that the admission policies of the community colleges varied. He recommended that Iowa public community colleges and the four-year institutions formulate common policies regarding transfer and reentry to the university.

Kuznik further stated that the reverse transfer students attending the community colleges were successful academically, liked the two-year college and planned to continue to pursue their major field. The part of the study having to do with Holland's investigative occupational category showed the students moved into the realistic and conventional categories (53).

Kuznik's study in comparing the two-year and four-year institutions reached the following conclusions:

1. More time is given to student discussion in two-year college classes than in four-year college classes.

2. Four-year college instructors are more interested in their students in an academic sense than in a personal sense as compared to two-year college instructors.

3. Two-year college instructors do a better job of letting students know what they expect from them than do four-year college instructors.

4. Two-year college instructors ask more questions in class than four-year college instructors.

5. Two-year college instructors do a better job of telling students

how well they are meeting the instructor's expectations than do four-year college instructors.

6. Two-year college instructors seem to really like their students more than do four-year college instructors.

7. Student participation in classwork is more important in two-year college classwork than in four-year college classwork.

8. More two-year college instructors seem to want to keep track of the students' progress on current assignments than do four-year college instructors.

9. Instructors in two-year colleges are more willing to help students answer difficult questions than are instructors in four-year colleges. (54, p. 26)

Kintzer pursues the idea of the second-chance student and the second-chance college by saying:

> The open door college, by virtue of its interest in every student who seeks the opportunity to prove that he can successfully do collegiate work is, to a degree, also a second chance college. (48, pp. 16-19)

He indicates that the student's failure at the university may be due to emotional immaturity, lack of counseling, inability to adjust to the large institution and lack of ability in basic skills.

Lee, (56) in reviewing the "retread" function of five Michigan community colleges concluded that with a second chance few students change from four- to two-year programs and over half of the "retreads" leave the community college before completing a program or transferring to another institution.

Preus and Swain in Open Doors for Reverse Transfer Students in summing up studies reviewed said:

> Most researchers have concluded that lack of sufficient scholastic ability is not the principal reason for academic failure (although it may be predictive of failure).

> Such conclusions should send a clear signal to the "open door" colleges which consider their responsibilities to include "salvage," provision of a second chance educational opportunity for a wide range of clients. The message reads, "These are persons who may rightly come to us for the services we provide. Let us address ourselves to their needs." (80, pp. 27-29.

The many nuances and actualities that were present in the review of the literature presents a varied picture of the problems encountered when a student transfers to a four-year college or university. These problems form a background of hurdles over which many of these reverse transfer students shall have to renegotiate if they return to complete a baccalaureate degree. The reverse transfer studies reviewed suggest a need to know more about the reverse transfer student and how any student needs relate to future planning as these comparatively unique and new institutions attempt to serve the varied educational levels identified with the area schools.

METHOD OF PROCEDURE

Sample

The sources of data for this study were records of students enrolled in Iowa area community colleges and vocational-technical schools in 1971-72.

A Student Characteristics Questionnaire was developed cooperatively by the State Department of Public Instruction and the Student Services Divisions of the area schools. The questionnaire was administered to all students who enrolled in 1971-72. The information from which the sample was taken was based on the results of these questionnaires. The data were placed on magnetic computer tape for the entire area school population of 20,742 students. The reverse transfer students totaled 981 of this population. Information on 955 students was usable. A computer random-sort selection and print-out of new freshmen students (natives) was chosen to match the 955 reverse transfer students who were transferring from a four-year institution to an area school. These two groups of students were also used for assessing achievement.

Data Collected

Student characteristics

The following variables were used to obtain information on student characteristics:

1. Status upon entering the institution, full-time or part-time
2. Source of information about this institution

3. Sex
4. Ethnic group
5. Age
6. Marital status
7. Highest school grade completed before attending this institution
8. Highest grade in school completed by father
9. Highest grade in school completed by mother
10. Family income, or own, if self-supporting
11. Distance traveled to class each day (one way)
12. Residence category while in school
13. Plans for employment while in school
14. Most important reason for attending this school
15. Do you plan to be employed in Iowa when completing school?
16. How much of the cost of this year's educational expense do your parents contribute?
17. Are you a veteran?

Student achievement

The following variables were used to obtain information on the student achievement in each group whenever they were available.

1. Sex
2. Age
3. High school cumulative grade point average
4. High school class rank
5. High school class size
6. American College Testing Program scores on English

7. American College Testing Program scores on Mathematics
8. American College Testing Program scores on Social Studies
9. American College Testing Program scores on Natural Science
10. American College Testing Program scores on Composite Score
11. College or vocational-technical school grade point average
12. Cumulative hours earned prior to reverse transfer
13. Area college transferred to by reverse transfer students
14. Program entered by reverse transfer students
15. Graduated or completed a program, both groups
16. Area college cumulative grade point average
17. Area college cumulative hours earned

The study was reviewed and discussed with the area school Deans and Directors of Arts and Sciences and the Directors of Student Services for reactions and suggestions. Through the cooperation of the State Department of Public Instruction, a statement of the proposed study was placed on the agenda of the Area School Superintendents' monthly meeting and the study was given their approval.

A computer random-sort print-out had identified the students on which information was needed to complete the achievement questionnaires. The student achievement questionnaires were sent to Ellsworth Community College and the three centers of Iowa Central Community College at Fort Dodge, Eagle Grove and Webster City to ascertain that the makeup of the instrument would obtain the needed information.

The student achievement information was obtained during 1973-74 from the Directors of Student Services of each of the area schools included in

the study. A time lapse of two years was insured for the achievement aspect to be completed. These directors were given xerox copies of the print-out listing the names of the native students and of the reverse transfer students. A sufficient number of the instruments for recording the achievement of each group of students was also enclosed. A number system was used on the print-outs and on the instruments to replace the students' names so the confidential nature of the information was not violated (see the Appendix).

Analysis of Data

Student characteristics and achievement data were reviewed in detail using the appropriate statistics for the characteristics, and making use of charts and descriptive processes in some detail. The student achievement data were treated by means and standard deviation, correlation matrix, and t tests. A multiple regression analysis was attempted to isolate effective variables for use by counselors to help predict the area school grade point average for each of these student groups:

1. Native students entering the arts and sciences programs.
2. Reverse transfer students entering the arts and sciences programs.
3. Native students entering the vocational-technical programs.
4. Reverse transfer students entering the vocational-technical programs.

A multiple regression analysis using the Statistical Analysis

System was also made to indicate the influence of the variables and the interaction between these variables to predict area school graduation, area school grade point average, and area school credit hours earned by the native and reverse transfer students.

An assessment of the effectiveness of the redirecting function of the area schools was made by evaluating graduates and achievement.

The hypotheses in null form were tested by the t test statistic.

FINDINGS

The findings of this study are presented in the following order: the first part is a general description of characteristics of the reverse transfer students. The characteristics are presented basically in descriptive terms using frequency distribution, percentages and numbers of students applicable to the groups being studied. Each variable used in the study of characteristics is presented in chart form and discussed in the following order: 1) Student groups, native and reverse transfer; 2) Student groups divided by Vocational-Technical or Arts and Sciences programs; 3) Vocational-Technical student groups divided by sex; and 4) Arts and Sciences student groups divided by sex. The study of achievement of reverse transfer students by sex and program makes use of frequency distribution and percentages. The mean scores and standard deviations of the two groups, reverse transfer and native students, with a correlation matrix for each group indicate the relationships between the achievement variables and the student groups. Variables used are high school grade point average; high school class percentile rank; American College Test scores on English, Mathematics, Social Science, Natural Science, Composite Score; area school grade point average; and area school credit hours earned. The significance of the four proposed null hypotheses are discussed and evaluated by use of the "t" test. A Multiple Regression statistical analysis using the Statistical Package for Social Sciences was made to determine the best combination of variables for use by counselors to help predict the area college grade point average, which was the

criterion to measure success in the area college.

A multiple regression analysis using the Statistical Analysis System was also made to identify the influential variables and the interaction between these variables on predicting area school graduation, area school grade point average and area school credit hours earned by the native and reverse transfer students.

An attempt was made to assess the redirecting function of the reverse transfer students attending the area schools.

Student Characteristics

Table 3 indicates that the total number of reverse transfer students entering vocational-technical and arts and sciences programs was 955 students. The full-time students numbered 753 (78.8%) of the total number of reverse transfer students. There was a total of 202 part-time reverse transfer students (21.2%).

Table 3. Number of full-time and part-time reverse transfer students entering vocational-technical and arts and sciences divisions

	Full-time	Part-time	Total
N	753	202	955
%	78.8	21.2	100.0

Table 4 divides the full-time and part-time reverse transfer students by those entering the vocational-technical program and those entering the arts and sciences programs. It showed that of the total of 753 full-time students 442 or 46.3% entered the arts and sciences programs

while 311 or 32.5% of the full-time students entered the vocational-technical programs.

Part-time students entering the arts and sciences programs outnumbered those part-time students entering the vocational-technical programs by an approximately 7 to 1 ratio or 179 (18.7%) to 23 (2.5%).

The total number of full-time and part-time students entering the arts and sciences programs was 621 or 65%. The total number of full-time and part-time students entering vocational-technical programs was 334 or 35%.

Table 4. Number of full-time and part-time reverse transfer students entering vocational-technical and arts and sciences programs

Program		Full-time	Part-time	Total
Vocational-technical	N	311	23	334
	%	32.5	2.5	35.0
Arts and sciences	N	442	179	621
	%	46.3	18.7	65
Total	N	753	202	955
	%	78.8	21.2	100.0

Viewing Table 5 the vocational-technical division enrolled 174 full-time male students and 137 full-time female students or 52.1% full-time male and 41.0% full-time female students.

Part-time students accounted for only a small percentage of the total number. Males, part-time, were 16 or 4.8% and females, part-time were 7 or 2.1%

Full-time male and female students totaled 311 (93.1%) while part-time male and female students were 23 (6.9%). The total number of part-time and full-time male and female students was 334.

Table 5. Number of full-time and part-time by sex of reverse transfer students entering the vocational-technical division

Vocational-technical		Full-time	Part-time	Total
Males	N	174	16	190
	%	52.1	4.8	56.9
Females	N	137	7	144
	%	41.0	2.1	43.1
Total	N	311	23	334
	%	93.1	6.9	100.0

As indicated in Table 6 the arts and sciences division enrolled 315 full-time male students and 127 full-time female or 50.7% full-time males and 20.5% full-time females.

Part-time students accounted for 88 male students (14.2%); over 5 times the number of part-time male students in vocational-technical. This same type of large increase is more pronounced in comparing the part-time arts and sciences females (91 students, 14.7%) as compared to vocational-technical females (7 students, 2.1%).

Full-time male and female students totaled 442 students (71.2%) while part-time male and female students were 179 students (28.8%). The total number of part-time and full-time male and female students was 621.

Table 6: Number of full-time and part-time by sex of reverse transfer students entering arts and sciences division

Arts and sciences		Full-time	Part-time	Total
Males	N	315	88	403
	%	50.7	14.3	65.0
Females	N	127	91	218
	%	20.5	14.5	35.0
Total	N	442	179	621
	%	71.2	28.8	100.0

Inspection of Table 7 reveals various sources of information about the area schools. The best source of information about the area schools was other students. There was a total 313 (32.8% students who indicated that this was their best source of information about the area schools. The category of others included 242 (25.3%) students. High school counselors and admissions counselors were indicated by 87 (9.2%) students and 72 (7.5%) students respectively. Ninety-nine (10.4%) parents were indicated as a source of information. Other sources were employers, 22 (2.3%) students; welfare agencies, 5 (0.5%) students; employment office, 8 (0.8%) students; radio and T.V. was indicated by 90 (9.4%) students; vocational-rehabilitation, 17 (1.8%) students.

Table 8 gives a breakdown of the source of information received about the area schools by reverse transfer student enrolled in vocational-technical and arts and sciences programs.

Table 7. Source of information for reverse transfer students about the area schools

		Parent	Employer	Other students	Welfare	Employment office	Radio TV	Admissions counselor	High school counselor	Vocational rehabilitation	Other	Row total
Reverse transfer	N	99	22	313	5	8	90	72	87	17	242	955
	%	10.4	2.3	32.8	0.5	0.8	9.4	7.5	9.2	1.8	25.3	100.0

Table 8. Source of information about the area schools divided by vocational-technical or arts and sciences programs

Program		Parent	Employers	Other students	Welfare	Employment office	Radio TV	Admissions counselor	High school counselor	Vocational rehabilitation	Other	Row total
Vocational-technical	N	35	5	106	4	5	27	20	32	8	92	334
	%	3.7	0.6	11.1	0.4	0.5	2.8	2.1	3.4	0.8	9.6	35.0
Arts and sciences	N	64	17	207	1	3	63	52	55	9	150	621
	%	6.7	1.8	21.7	0.1	0.3	6.6	5.4	5.8	0.9	25.3	65.0
Total	N	99	22	313	5	8	90	72	87	17	242	955
	%	10.4	2.4	32.8	0.5	0.8	9.4	7.5	9.1	1.8	25.2	100.0

In the vocational-technical area there are the following divisions stating sources of information: parents advised 35 (3.7%) students; employers advised 5 (0.6%) students; other students advised 106 (11.1%) students. This category was consistently the most effective source of information for the reverse transfer students. Welfare agency advised 4 (0.4%) students; employment office advised 5 (0.5%) students; radio and T.V. advised 27 (2.8%) students; admissions counselor advised 20 (2.1%) students; high school counselor advised 32 (3.4%) students; vocational rehabilitation advised 8 (0.8%) students; others advised 92 (9.6%) students.

In the arts and sciences there are the following divisions: parents advised 64 (6.7%) students; employers contacted 17 (1.8%) students; other students advised 207 (21.7%) students. As in the vocational-technical areas this was the most effective area of communication. Welfare agency advised 1 (0.1%) student; employment office advised 3 (0.3%) students; radio and T.V. contacted 63 (6.6%) students; admissions counselors advised 52 (5.4%) students; high school counselor advised 55 (5.8%) students; vocational rehabilitation contacted 9 (0.9%) students; others advised 150 (25.3%) students.

There was a total of 334 (35%) students enrolled in the vocational-technical programs and a total of 621 (65%) students enrolled in the arts and sciences programs.

An examination of Table 9 gives the source of information about the area schools divided by sex of students enrolled in vocational-technical programs. Male students enrolled in the vocational-technical

Table 9. Source of information about the area schools divided by sex of students and vocational-technical programs

Vocational-technical		Parent	Employers	Other students	Welfare	Employment office	Radio TV	Admissions counselor	High school counselor	Vocational rehabilitation	Other	Row total
Males	N	21	2	59	0	2	19	9	17	7	54	190
	%	6.3	0.6	17.7	0	0.6	5.7	2.7	5.1	2.1	16.2	57.0
Females	N	14	3	47	4	3	8	11	15	1	38	144
	%	4.2	0.9	14.1	1.2	0.9	2.4	3.3	4.5	0.3	11.4	43.0
Total	N	35	5	106	4	5	27	20	32	8	92	334
	%	10.5	1.5	31.7	1.2	1.5	8.1	6.0	9.6	2.4	27.5	100.0

programs indicated sources of information as follows: parents advised 21 (6.3%) students; employers contacted 2 (0.6%) students; other students advised 59 (17.7%) students; welfare advised no students employment office contacted 2 (0.6%) students; radio and T.V. informed 19 (5.7%) students of the area schools' opportunities; admissions counselor advised 9 (2.7%) students; high school counselor advised 17 (5.1%) students; vocational rehabilitation advised 7 (6.0%) students.

The female students enrolled in the vocational-technical programs listed their sources of information as follows: parents advised 14 (4.2%) students; employers contacted 3 (0.9%) students; other students advised 47 (14.1%) students; welfare advised 4 (1.2%) students; employment office 3 (0.9%) students; radio and T.V. 8 (2.4%) students; admission counselor advised 11 (3.3%) students; high school counselor advised 15 (6.0%) students; vocational rehabilitation contacted 1 (0.3%) students; others contacted 38 (11.4%) students.

There was a total of 190 (56.9%) males and 144 (43.1%) females enrolled in the vocational-technical programs.

Table 10 gives a comparative view of the source of information about the area schools divided by sex of students enrolled in the arts and sciences programs. Male students enrolled in the arts and sciences programs received information as follows: parents advised 34 (5.5%) students; employers contacted 13 (2.1%) students; other students advised or contacted 154 (24.8%) students; welfare contacted 1 (0.2%) student; employment office contacted 2 (0.3%) students; radio, T.V. contacted 31 (5.0%) students; admissions counselors contacted 31 (5.0%) students;

Table 10. Source of information about the area schools divided by sex of students and arts and sciences division

Arts and sciences		Parent	Employer	Other students	Welfare	Employment office	Radio TV	Admissions counselor	High school counselor	Vocational rehabilitation	Other	Row totals
Males	N	34	13	154	1	2	31	31	32	8	97	403
	%	5.5	2.1	24.8	0.2	.3	5.0	5.0	5.2	1.3	15.6	65.0
Females	N	30	4	53	0	1	32	21	23	1	53	218
	%	4.8	.6	8.5	0.0	.2	5.2	3.4	3.7	0.1	8.5	35.0
Total	N	64	17	207	1	3	63	52	55	9	150	621
	%	10.3	2.7	33.3	0.2	.5	10.1	8.4	8.9	1.4	24.2	100.0

high school counselors advised 8 (1.3%) students; others contacted 97 (15.6%) students.

The female students enrolled in the arts and sciences programs listed their sources of information as follows: parents advised 30 (4.8%) students; employers contacted 4 (0.6%) students; other students advised 53 (8.5%) students; welfare no students; employment office contacted 1 (0.2%) student; radio, T.V. contacted 32 (5.2%) students; admissions counselors advised 21 (3.4%) students; high school counselors advised 23 (3.7%) students; vocational rehabilitation contacted 1 (0.2%) student; others contacted 53 (8.5%) students.

There was a total of 403 (65.0%) males and 218 (35.0%) females enrolled in the arts and sciences programs.

Looking at Table 11 the total number of reverse transfer students, divided by sex, who attended the community colleges and vocational-technical schools was 955 students. The male students numbered 593 (62.1%) and the female students numbered 362 or 37.9% of the total 955 students.

Table 11. Sex of reverse transfer students attending the Iowa community colleges and vocational-technical schools

	Male	Female	Total
N	593	362	955
%	62.1	37.9	100.0

Viewing Table 12 shows the sex of reverse transfer students enrolled in the vocational-technical programs and those enrolled in the arts and sciences programs.

A total of 190 (19.9%) male students and 144 (15.1%) female students entered the vocational-technical area, while a total of 403 (42.2%) male students and 218 (21.8%) female students entered the arts and sciences programs.

The number of male students entering both programs was 593 or 62.1% and 362 female students or 37.9% for a total enrollment of 955 students.

Table 12. Sex of reverse transfer students divided into those enrolled in vocational-technical and arts and sciences programs

Program		Male	Female	Total
Vocational-technical	N	190	144	334
	%	19.9	15.1	35.0
Arts and sciences	N	403	218	621
	%	42.2	22.8	65.0
Total	N	593	362	955
	%	62.1	37.9	100.0

Table 13 indicates that the vocational-technical division enrolled 174 full-time male students and 137 full-time female students or 52.1% full-time male and 41.0% full-time female students.

Part-time students accounted for only a small percentage of the

total number. Males, part-time, were 16 or 4.8% and females, part-time, were 7 or 2.1%.

The total number of full-time and part-time students entering the arts and sciences programs were 621 or 65%.

The total number of full-time and part-time students entering vocational-technical programs was 334 or 35%.

Table 13 showed that full-time male and female students totaled 311 or 93.1% while part-time male and female was 23 or 6.9%. The total number of part-time and full-time male and female students was 334.

Part-time students entering the arts and sciences programs outnumbered those part-time students entering the vocational-technical programs by approximately a 7 to 1 ratio or 179 (28.8%) (Table 14) to 23 (6.9%).

Table 13. Sex of reverse transfer students entering the vocational-technical programs

Vocational-technical		Full-time	Part-time	Total
Males	N	174	16	190
	%	52.1	4.8	56.9
Females	N	137	7	144
	%	41.0	2.1	43.1
Total	N	311	23	334
	%	93.1	6.9	100.0

According to Table 14 the arts and sciences division enrolled 315 full-time males and 127 full-time females or 50.7% full-time males and 20.5% full-time females.

Part-time male students accounted for 88 or 14. %. This was over 5 times the number of part-time male students in vocational-technical programs. This same type of large increase was more pronounced when compared with the part-time arts and sciences females (91 (14. %) students as compared to vocational-technical females (7 (2.1%) students.

Full-time male and female students totaled 442 or 71.2% while part-time male and female students was 179 or 28.8%. The total number of part-time and full-time male and female students was 621.

Table 14. Sex of reverse transfer students entering arts and sciences programs

Arts and sciences		Full-time	Part-time	Total
Males	N	315	88	403
	%	50.7	14.3	65.0
Females	N	127	91	218
	%	20.5	14.5	35.0
Total	N	442	179	621
	%	71.2	28.8	100.0

Ethnic group enrollments listed in Table 15 indicate that ethnic reverse transfer student groups who attended the Iowa community colleges and vocational-technical schools were basically white students; 923 (96.6%) students.

Afro-American (Black) students have the next largest enrollment with 19 (2.0%)students. American Indians are 2 (0.2%) students, Oriental 4 (0.4%) students, others 7 (0.7%) students respectively.

In Table 16 the ethnic reverse transfer student groups are divided into those enrolled in vocational-technical or arts and sciences programs. There is a total of 334 (35.0%) students enrolled in the vocational-technical program. This group is divided into the following ethnic categories: Afro-American (Black) 3 (0.3%) students; American Indian 1 (0.1%) student; white 323 (33.9%) students; Oriental 3 (0.3%) students; Spanish American, no students; others 7 (0.4%) students.

Students enrolled in the arts and sciences ethnic groups total 621 (65.0%). The ethnic divisions are: Afro-American (Black) 16 (1.7%) students; American Indian 1 (0.1%) student; white 600 (62.8%) students; Oriental 1 (0.1%) student; Spanish American, no students; others 3 (0.3%) students.

Table 17 summarizes ethnic reverse transfer student groups by sex enrolled in the vocational-technical programs. The male students by ethnic group and percent of ethnic males and females were enrolled as follows: Male students by ethnic groups were: Afro-American (Black) 2 (0.6%) students; American Indian 1 (0.3%) student; white 183 (54.8%) students; Oriental 1 (0.3%) student; Spanish American, no students;

Table 15. Ethnic reverse transfer student groups attending the Iowa community colleges and vocational-technical schools

	Afro-American (Black)	American Indian	White	Oriental	Spanish American	Others	Total
N	19	2	923	4	0	7	955
%	2.0	0.2	96.6	0.4	0.0	0.7	100.0

Table 16. Ethnic reverse transfer student groups divided into those enrolled in vocational-technical or arts and sciences programs

Program		Afro-American (Black)	American Indian	White	Oriental	Spanish American	Others	Total
Vocational-technical	N	3	1	323	3	0	4	334
	%	0.3	0.1	33.9	0.3	0.0	0.4	35.0
Arts and sciences	N	16	1	600	1	0	3	621
	%	1.7	0.1	62.8	0.1	0.0	0.3	65.0
Total	N	19	2	923	4	0	7	955
	%	2.0	0.2	96.7	0.4	0.0	0.7	100.0

Table 17. Ethnic reverse transfer student groups divided by sex of students enrolled in the vocational-technical programs

Vocational-technical		Afro-American (Black)	American Indian	White	Oriental	Spanish American	Others	Total
Males	N	2	1	183	1	0	3	190
	%	0.6	0.3	54.8	0.3	0.0	0.9	56.9
Females	N	1	0	140	2	0	1	144
	%	0.3	0.0	41.9	0.6	0.0	0.3	43.1
Total	N	3	1	323	3	0	4	334
	%	0.9	0.3	96.7	0.9	0.0	1.2	100.0

others 3 (0.9%) students with a total of 190 (56.9%) males.

The female students by ethnic groups were: Afro-American (Black) 1 (0.3%) student; American Indian 1 (0.3%) student; white 140 (41.9%) students; Oriental 2 (0.6%) students; Spanish American, no students; other 1 (0.3%) student. The total females enrolled in the vocational-technical programs were 144 (43.1%) students.

Table 18 summarizes ethnic reverse transfer student groups by sex enrolled in the arts and sciences programs. The male students, by ethnic group and percent of ethnic males enrolled are as follows: Male students by ethnic groups were: Afro-American (Black) 11 (1.8%) students; American Indian, no students; white 391 (63.0%) students; Oriental 1 (0.2%) student; Spanish American, no students; others 3 (0.5%) students. The total males enrolled were 403 (64.9%) students.

The female students by ethnic groups were: Afro-American (Black) 5 (0.8%) students; American Indian 1 (0.2%) student; white 209 (33.5%) students; Oriental, no students; Spanish American, no students; others 3 (0.5%) students. The total females enrolled was 218 or 35.1% of those students enrolled in the arts and science programs.

Age groups of reverse transfer students who attended the Iowa community colleges and vocational-technical schools are set forth in Table 19. The reverse transfer students were significantly older than the "regular" entering freshmen. There were 5 (0.5%) students 17 years of age and below; 69 (7.2%) students 18 years of age; 319 (33.4%) students 19 years of age; 292 (30.6%) students 20-22 years of age; 144 (15.1%) students 23-25 years of age; 89 (9.3%) students 26-35 years of age;

Table 18. Ethnic reverse transfer student groups divided by sex of students enrolled in the arts and sciences programs

Arts and Sciences		Afro-American (Black)	American Indian	White	Oriental	Spanish American	Others	Total
Males	N	11	0	391	1	1	0	403
	%	1.8	0.0	63.0	0.2	0.0	0.0	65.0
Females	N	5	1	209	0	0	3	218
	%	0.8	0.2	33.5	0.0	0.0	0.5	35.0
Total	N	16	1	600	1	0	3	621
	%	2.6	0.2	96.5	0.2	0.0	0.5	100.0

Table 19. Age groups of reverse transfer students attending the Iowa Community Colleges and Vocational-Technical Schools

	17 years and below	18	19	20-22	23-25	26-35	36-45	46-55	56-65	Total
N	5	69	319	292	144	89	23	11	3	955
%	0.5	7.2	33.4	30.6	15.1	9.3	2.4	1.2	0.3	100.0

23 (2.4%) students 36-45 years of age; 11 (1.2%) students 46-55 years of age and 3 (0.2%) students 56-65 years of age. There was a total of 955 reverse transfer students in the various age groups.

The 19-22 age group included 64% of the reverse transfer students. The next age group increased the percentages to 79.1%. Of the reverse transfer students, 88.9% were between the ages of 19 and 35 years of age. Fifty-five percent of the reverse transfers were 20-35 years of age.

Age groups of reverse transfer students in Table 20 show those students enrolled in vocational-technical and arts and sciences programs. There were 2 (0.2%) students enrolled 17 years and below; 18 (1.9%) students 18 years of age; 115 (12.0%) students 19 years of age; 118 (12.4%) students 20-22 years of age; 43 (12.4%) students 23-25 years of age; 30 (3.1%) students 26-35 years of age; 5 (0.5%) students 36-45 years of age; 3 (0.4%) students 46-55 years of age; and 56-66 years of age, none. There was a total of 334 (35.0%) students enrolled in the vocational-technical programs.

There were 3 (0.3%) arts and sciences students enrolled 17 years and below; 51 (5.3%) students 18 years of age; 204 (21.4%) students 19 years of age; 174 (18.2%) students 20-22 years of age; 101 (10.6%) students 23-25 years of age; 59 (6.2%) students 26-35 years of age; 18 (1.9%) students 36-45 years of age; 8 (0.8%) students 46-55 years of age; 3 (0.3%) students 56-66 years of age. There was a total of 621 (65%) students enrolled in the arts and sciences programs.

Table 20. Age groups of reverse transfer students divided by those enrolled in vocational-technical and arts and sciences programs

Program		17 years and below	18	19	20-22	23-25	26-35	36-45	46-55	56-66	Total
Vocational-technical	N	2	18	115	118	43	30	5	3	0	334
	%	0.2	1.9	12.0	12.4	4.5	3.1	0.5	0.4	0.0	35.0
Arts and sciences	N	3	51	204	174	101	59	18	8	3	621
	%	0.3	5.3	21.4	18.2	10.6	6.2	1.9	0.8	0.3	65.0
Total	N	5	69	319	292	144	89	23	11	3	955
	%	0.5	7.2	33.4	30.6	15.1	9.3	2.4	1.2	0.3	100.0

Table 21 shows the age groups of reverse transfer students divided by sex enrolled in the vocational-technical programs. Male students: 17 years and below, 1 (0.3%) student; 18 years of age, 6 (1.8%) students; 19 years of age, 51 (15.3%) students; 20-22 years of age, 72 (21.6%) students; 23-25 years of age, 35 (10.5%) students; 26-35 years of age, 21 (6.3%) students; 36-45 years of age, 2 (0.6%) students; 45-55 years of age, 2 (0.6%) students; 56-65 years of age, no students. There was a total of 190 (57.0%) male students enrolled in the vocational-technical programs.

Female students: 17 years and below, 1 (0.3%) student; 18 years of age, 12 (3.6%) students; 19 years of age, 64 (19.2%) students; 20-22 years of age, 46 (13.8%) students; 23-25 years of age, 8 (2.4%) students; 26-35 years of age, 9 (2.7%) students; 36-45 years of age, 3 (0.7%) students; 46-55 years of age, 1 (0.3%) student; 56-65 years of age, no students. There was a total of 144 (43.0%) female students enrolled in the vocational-technical programs.

Table 22 shows the age groups of reverse transfer students divided by sex enrolled in arts and sciences programs. Males 17 years and below total 2 (0.3%) students; 18 years of age, 23 (3.7%) students; 19 years of age, 129 (20.8%) students; 20-22 years of age, 124 (20.0%) students; 23-25 years of age, 80 (12.9%) students; 26-35 years of age, 34 (5.5%) students; 36-45 years of age, 7 (1.1%) students; 46-55 years of age, 4 (0.7%) students; 56-65 years of age, no students. There was a total of 403 (65.0%) male students enrolled in the arts and sciences programs.

Female students 17 years and below, 1 (0.2%) student; 18 years of

Table 21. Age groups of reverse transfer students divided by sex of students enrolled in the vocational-technical programs

Vocational-technical		17 years and below	18	19	20-22	23-25	26-35	36-45	46-55	56-65	Total
Males	N	1	6	51	72	35	21	2	2	0	190
	%	0.3	1.8	15.3	21.6	10.5	6.3	0.6	0.6	0.0	57.0
Females	N	1	12	64	46	8	9	3	1	0	144
	%	0.3	3.6	19.2	13.8	2.4	2.7	0.7	0.3	0.0	43.0
Total	N	2	18	115	118	43	30	5	3	0	334
	%	0.6	5.4	34.5	35.4	12.9	9.0	1.3	0.9	0.0	100.0

Table 22. Age groups of reverse transfer students divided by sex of students enrolled in the arts and sciences programs

Arts and sciences		17 years and below	18	19	20-22	23-25	26-35	36-45	46-55	56-65	Total
Males	N	2	23	129	124	80	34	7	4	0	403
	%	0.3	3.7	20.8	20.0	12.9	5.5	1.1	0.6	0.0	64.9
Females	N	1	28	75	50	21	25	11	4	3	218
	%	0.2	4.5	12.1	8.1	3.4	4.0	1.8	0.6	0.5	35.1
Total	N	3	51	204	174	101	59	18	8	3	621
	%	0.5	8.2	32.9	28.0	16.3	9.5	2.9	1.3	0.5	100.0

age, 28 (4.5%) students; 19 years of age, 75 (12.1%) students; 20-22 years of age, 50 (8.1%) students; 23-25 years of age, 21 (3.4%) students; 26-35 years of age, 25 (4.0%) students; 36-45 years of age, 11 (1.8%) students; 46-55 years of age, 4 (0.6%) students; 56-65 years of age, 3 (0.5%) students. There is a total of 218 (35.1%) female students enrolled in the arts and sciences programs.

Table 23 presents the marital status of reverse transfer students who attended the vocational-technical and arts and sciences programs. There were 680 (71.2%) single students, 239 (25%) married students, 20 (2.1%) divorced students, 4 (0.4%) widowed students, and 12 (1.3%) separated students. This totaled 955 students.

Table 23. Marital status of reverse transfer students who are attending the vocational-technical and arts and sciences programs

	Single	Married	Divorced	Widowed	Separated	Total
N	680	239	20	4	12	955
%	71.2	25.0	2.1	0.4	1.3	100.0

Table 24 presents the marital status of transfer students enrolled in vocational-technical and arts and sciences programs. In the vocational-technical programs there were 255 (26.7%) single students, 69 (7.2%) married students, 3 (0.3%) divorced students, 1 (0.1%) widowed students, 6 (0.7%) separated students. There was a total of 334 (35.0%)

Table 24. Marital status of reverse transfer students divided by those enrolled in vocational-technical and arts and sciences programs

Program		Single	Married	Divorced	Widowed	Separated	Total
Vocational-technical	N	255	69	3	1	6	334
	%	26.7	7.2	0.3	0.1	0.7	35.0
Arts and sciences	N	425	170	17	3	6	621
	%	44.5	17.8	1.8	0.3	0.6	65.0
Total	N	680	239	20	4	12	955
	%	71.2	25.0	2.1	0.4	1.3	100.0

students in these categories enrolled in vocational-technical programs.

The arts and sciences marital status had 425 (44.5%) single students, 170 (17.8%) married students, 17 (1.8%) divorced students, 3 (0.3%) widowed students, 6 (12%) separated students. There was a total of 621 (65%) students enrolled in these categories in the arts and sciences programs.

Table 25 presents the marital status of reverse transfer students by sex enrolled in the vocational-technical programs. The male students were as follows: single students, 138 (41.3%); married students, 48 (14.4%); divorced students, 2 (0.6%); widowed students, none, and separated students, 2 (0.6%). This was a total of 190 (56.9%) male students. The female marital status was: single students, 117 (35.0%); married students, 21 (6.3%); divorced students, 1 (0.3%); widowed students, 1 (0.3%); separated students, 4 (1.2%). This was a total of 144 (43.1%) female students.

Table 26 presents the marital status by sex of reverse transfer students enrolled in the arts and sciences programs. The male students were as follows: single students, 298 (48.0%); married students, 93 (15.0%); divorced students, 9 (1.4%); widowed students, none, and separated students, 3 (0.5%). This is a total group of 403 (65.0%). The female students are as follows: single students, 127 (20.3%); married students, 77 (12.4%); divorced students, 8 (1.3%); widowed students, none; and separated students, 3 (0.5%). This is a total of 403 (65.0%) male students, and 218 (35.0%) female students.

Table 25. Marital status of reverse transfer students by sex of students enrolled in the vocational-technical programs

Vocational-technical		Single	Married	Divorced	Widowed	Separated	Total
Males	N	138	48	2	0	2	190
	%	41.3	14.4	0.6	0.0	0.6	56.9
Females	N	117	21	1	1	4	144
	%	35.0	6.3	0.3	0.3	1.2	43.1
Total	N	225	69	3	1	6	334
	%	76.3	20.7	0.9	0.3	1.8	100.0

Table 26. Marital status of reverse transfer students by sex of students enrolled in the arts and sciences programs

Arts and sciences		Single	Married	Divorced	Widowed	Separated	Total
Males	N	298	93	9	0	3	403
	%	48.0	15.0	1.4	0.0	0.5	65.0
Females	N	127	77	8	3	3	218
	%	20.3	12.4	1.3	0.5	0.5	35.0
Total	N	425	170	17	3	6	621
	%	68.3	27.4	2.7	0.5	1.0	100.0

Table 27 shows the highest school grade completed by reverse transfer students before attending vocational-technical or arts and sciences school. The divisions are: some high school, 7 (0.7%) students; high school graduate, 275 (28.8%) students; high school equivalency, 10 (1.0%) students, and post-high school students, 663 (69.4%).

Table 27. Highest school grade completed by reverse transfer students before attending a vocational-technical and arts and sciences school

	Some high school	High school graduate	High school equivalent	Post high school	Total
N	7	275	10	663	955
%	0.7	28.8	1.0	69.4	100.0

Table 28 shows the highest school grade completed by reverse transfer students before enrolling in a vocational-technical or arts and sciences program. The number of vocational-technical students were as follows: those having some high school were 5 (0.5%) students; high school graduates, 83 (8.7%) students; high school equivalent, 3 (0.3%) students; post high school, 243 (25.4%) students. There was a total of 334 (35.0%) students in vocational-technical programs. The number of arts and sciences students having some high school were 2 (0.2%) students; high school graduates, 192 (22.1%) students; high school equivalents, 7 (0.7%) students; post high school, 420 (44.0%) students.

Table 28. Highest school grade completed by reverse transfer students before enrolling in a vocational-technical or arts and sciences program

Program		Some high school	High school graduate	High school equivalent	Post high school	Total
Vocational-technical	N	5	83	3	243	334
	%	0.5	8.7	0.3	25.4	35.0
Arts and sciences	N	2	192	7	420	621
	%	0.2	20.1	0.7	44.0	65.0
Total	N	7	275	10	663	955
	%	0.7	28.8	1.0	69.4	100.0

There was a total of 621 (65%) students in the arts and sciences programs.

Table 29 shows the highest school grade completed, according to sex, by reverse transfer students before enrolling in a vocational-technical program. The number of male students having some high school was 4 (1.2%) students; high school graduates, 49 (14.7%) students; high school equivalent, 2 (0.6%) students; post-high school, 135 (40.4%) students. There was a total of 190 (56.9%) male students. The number of female students with some high school was 1 (0.3%) student; high school graduate, 34 (10.2%) students; high school equivalent, 1 (0.3%) student; post-high school, 108 (32.3%) students. There was a total of 144 (43.1%) female students. The male and female student totals were: some high school, 5 (1.5%) students; high school graduate, 83 (24.9%) students; high school equivalent, 3 (0.9%) students; post-high school, 243 (72.7%) students.

Table 30 shows the highest school grade completed by reverse transfer students by sex before enrolling in an arts and sciences program. The number of male students having some high school was 2 (0.3%) students; high school graduates, 133 (21.4%) students; high school equivalent, 3 (0.5%) students; post-high school, 265 (42.7%) students. There was a total of 403 (65.0%) male students. The number of female students having some high school was zero; high school graduates, 59 (9.5%) students; high school equivalent, 4 (0.6%) students; and post-high school, 155 (25.0%) students. There was a total of 218 (35.0%) female students.

Table 29. Highest school grade completed by reverse transfer students according to sex of students before enrolling in a vocational-technical program

Vocational-technical		Some high school	High school graduate	High school equivalent	Post high school	Total
Males	N	4	49	2	135	190
	%	1.2	14.7	0.6	40.4	56.9
Females	N	1	34	1	108	144
	%	0.3	10.2	0.3	32.3	43.1
Total	N	5	83	3	243	334
	%	1.5	24.9	0.9	72.7	100.0

Table 30. Highest school grade completed by reverse transfer students according to sex of students before enrolling in an arts and sciences program

Arts and sciences		Some high school	High school graduate	High school equivalent	Post high school	Total
Males	N	2	133	3	265	403
	%	0.3	21.4	0.5	42.7	65.0
Females	N	0	59	4	155	218
	%	0.0	9.5	0.6	25.0	35.0
Total	N	2	192	7	420	621
	%	0.3	30.9	1.1	67.7	100.0

Table 31 presents the highest grade in school completed by fathers of reverse transfer students attending a vocational-technical and arts and sciences program. Fathers completing grade school or less number 100 (10.5%) fathers; some high school, no graduation, 137 (14.3%) fathers; high school graduate or high school equivalent, 364 (40.1%) fathers; some college, 145 (15.2%) fathers; college graduates 156 (16.3%) fathers; do not know, 34 (3.6%) fathers.

Table 32 presents the highest grade in school completed by fathers of reverse transfer students enrolled in vocational-technical and arts and sciences programs. The fathers of vocational-technical students had the following education: grade school or less, 45 (4.7%) fathers; some high school, no graduation, 40 (4.2%) fathers; high school graduate or its equivalent, 138 (14.4%) fathers; some college credit, 45 (4.7%) fathers; college graduates, 57 (6.0%) fathers; do not know, 9 (0.9%) fathers.

The fathers of arts and sciences students had the following education: grade school or less, 55 (5.8%) fathers; some high school, no graduation, 97 (10.2%) fathers; high school graduate or its equivalent, 245 (25.7%) fathers; some college, 100 (10.5%) fathers; college graduates, 99 (10.4%) fathers; do not know, 34 (3.6%) fathers.

Table 33 presents the highest grade in school completed by fathers of reverse transfer students according to sex of students enrolled in vocational-technical programs. Fathers of male students completing grade school or less numbered 24 (7.2%) fathers; some high school, no graduation, 30 (9.0%) fathers; high school graduate or high school

Table 31. Highest grade in school completed by fathers of reverse transfer students attending vocational-technical or arts and sciences programs

	Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
N	100	137	364	19	145	156	34	955
%	10.5	14.3	38.1	2.0	15.2	16.3	3.6	100.0

Table 32. Highest grade in school completed by fathers of reverse transfer students enrolled in vocational-technical and arts and sciences programs

Program		Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
Vocational-technical	N	45	40	134	4	45	57	9	334
	%	4.7	4.2	14.0	0.4	4.7	6.0	0.9	35.0
Arts and sciences	N	55	97	230	15	100	99	25	621
	%	5.8	10.2	24.1	1.6	10.5	10.4	2.6	65.0
Total	N	100	137	364	19	145	156	34	955
	%	10.5	14.3	38.1	2.0	15.2	16.3	3.6	100.0

Table 33. Highest grade in school completed by fathers of reverse transfer students according to sex of students enrolled in vocational-technical programs

Vocational-technical		Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
Males	N	24	30	70	2	24	34	6	190
	%	7.2	9.0	21.0	0.6	7.2	10.2	1.8	56.9
Females	N	21	10	64	2	21	23	3	144
	%	6.3	3.0	19.2	0.6	6.3	6.9	0.9	43.1
Total	N	45	40	134	4	45	57	9	334
	%	13.5	12.0	40.1	1.2	13.5	17.1	2.7	100.0

equivalency, 72 (21.6%) fathers; some college, 24 (7.2%) fathers; college graduates, 34 (10.2%) fathers; do not know, 6 (1.8%) fathers.

Fathers of female students had the following education: grade school or less, 21 (6.3%) fathers; some high school, no graduation, 10 (3.0%) fathers; high school graduates or high school equivalency, 66 (19.8%) fathers; some college, 23 (6.9%) fathers; college graduates, 23 (6.9%) fathers; do not know, 3 (0.9%) fathers.

Table 34 presents the highest grade in school completed by fathers of reverse transfer students according to sex of students enrolled in the arts and sciences programs. Fathers of male students completing grade school or less numbered 37 (6.0%) fathers; some high school, no graduation, 66 (10.6%) fathers; high school graduate or its equivalent, 164 (26.4%) fathers; some college, 59 (9.5%) fathers; college graduates, 60 (9.7%) fathers; do not know, 17 (2.7%) fathers.

Fathers of female students had the following education: grade school or less, 18 (2.9%) fathers; some high school, no graduation, 31 (5.0%) fathers; high school graduate or its equivalent, 81 (13.1%) fathers; some college, 41 (6.6%) fathers; college graduates 39 (6.3%) fathers; did not know, 8 (1.3%) fathers.

Table 35 presents the highest grade in school completed by mothers of reverse transfer students attending a vocational-technical and arts and sciences school. Mothers completing grade school or less number 58 (6.1%); some high school, no graduation, 110 (11.5%) mothers; high school graduates, 464 (48.6%) mothers; high school equivalent, 14 (1.5%) mothers; completing some college, 150 (15.7%) mothers; and graduating

Table 34. Highest grade in school completed by fathers of reverse transfer students according to sex of students enrolled in arts and sciences programs

Arts and sciences		Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
Males	N	37	66	157	7	59	60	17	403
	%	6.0	10.6	25.3	1.1	9.5	9.7	2.7	65.0
Females	N	18	31	73	8	41	39	8	278
	%	2.9	5.0	11.8	1.3	6.6	6.3	1.3	35.0
Total	N	55	97	230	15	100	99	25	621
	%	8.9	15.6	37.0	2.4	16.1	15.9	4.0	100.0

Table 35. Highest grade in school completed by mothers of reverse transfer students attending vocational-technical or arts and sciences programs

	Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
N	58	110	464	14	150	136	23	995
%	6.1	11.5	48.6	1.5	15.7	14.2	2.4	100.0

from college, 136 (14.2%) mothers; do not know, 23 (2.4%) mothers.

Table 36 presents the highest grade in school completed by mothers of reverse transfer students enrolled in vocational-technical and arts and sciences programs. The vocational-technical mothers had the following education: grade school or less, 22 (2.3%) mothers; some high school, no graduation, 33 (3.5%) mothers; high school graduates or its equivalent, 169 (17.7%) mothers; some college credit, 53 (5.5%) mothers; college graduates, 51 (5.3%) mothers; did not know, 6 (0.6%) mothers.

The arts and sciences mothers had the following education: grade school or less, 36 (3.8%) mothers; some high school, no graduation, 77 (8.1%) mothers; high school graduate or its equivalent, 309 (32.3%) mothers; completing some college, 97 (10.2%) mothers; college graduates, 85 (8.9%) mothers; did not know, 17 (1.8%) mothers.

Table 37 presents the highest grade in school completed by mothers of reverse transfer students according to sex of students enrolled in vocational-technical programs. Mothers of male students completing grade school or less number 11 (3.3%); some high school, no graduation, 10 (3.0%) mothers; high school graduation and high school equivalency, 99 (29.6%) mothers; some college, 31 (9.3%) mothers; college graduates, 22 (6.6%) mothers; do not know, 4 (1.2%) mothers.

Mothers of female students had the following education: grade school or less, 11 (3.3%) mothers; some high school, no graduation, 10 (3.0%) mothers; high school graduate or its equivalent, 70 (21%) mothers; some college, 22 (6.6%) mothers; college graduates, 29 (8.7%) mothers; did not know, 2 (0.6%) mothers.

Table 36. Highest grade in school completed by mothers of reverse transfer students enrolled in vocational-technical and arts and sciences programs

Program		Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
Vocational-technical	N	22	33	163	6	53	51	6	334
	%	2.3	3.5	17.1	0.6	5.5	5.3	0.6	35.0
Arts and sciences	N	36	77	301	8	97	85	17	621
	%	3.8	8.1	31.5	0.8	10.2	8.9	1.8	65.0
Total	N	58	110	464	14	150	136	23	955
	%	6.1	11.6	48.6	1.4	15.7	14.2	2.4	100.0

Table 37. Highest grade in school completed by mothers of reverse transfer students according to sex of students enrolled in vocational-technical programs

Vocational-technical		Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
Males	N	11	23	95	4	31	22	4	190
	%	3.3	6.9	28.4	1.2	9.3	6.6	1.2	56.9
Females	N	11	10	68	2	22	29	2	144
	%	3.3	3.0	20.4	0.6	6.6	8.7	0.6	43.1
Total	N	22	33	163	6	53	51	6	334
	%	6.6	9.9	48.8	1.8	15.9	15.3	1.8	100.0

Table 38 presents the highest grade in school completed by mothers of reverse transfer students according to sex of students enrolled in the arts and sciences programs. Mothers of male students completing grade school or less number 20 (3.2%); some high school, no graduation, 49 (7.9%) mothers; high school graduate or its equivalent, 209 (33.7%) mothers; some college, 66 (10.6%) mothers; college graduates, 45 (7.2%) mothers; do not know, 14 (2.3%) mothers.

Mothers of female students had the following education: grade school or less, 16 (2.6%) mothers; some high school, no graduation, 28 (4.5%) mothers; high school graduate or its equivalent, 100 (16.1%) mothers; some college, 31 (5%) mothers; college graduates, 40 (6.4%) mothers; do not know, 3 (0.5%) mothers.

Table 39 shows the family income or students' total income of reverse transfer students enrolled in vocational-technical and arts and sciences programs. The low income group, less than $3000 to $5900, shows 422 (44.2%) students; the middle income group, $6000 to $14,900, 342 (36.5%) students; the high income group, $15,000 to $18,000 plus, 140 (14.6%) students and a group of 31 (5.7%) students did not state their family income.

The low and middle income groups combined included 784 (80.7%) students; the high income group included 280 (14.6%) students.

Table 40 points out the family income or students' total income of reverse transfer students enrolled in vocational-technical or arts and sciences programs. The vocational-technical students were in the following income groups: the low income group, less than $3000 to $5900,

Table 38. Highest grade in school completed by mothers of reverse transfer students according to sex of students enrolled in arts and sciences programs

Arts and sciences		Grade school or less	Some high school no graduation	High school graduate	High school equivalent	Some college	College graduate	Do not know	Total
Males	N	20	49	203	6	66	45	14	403
	%	3.2	7.9	32.7	1.0	10.6	7.2	2.3	65.0
Females	N	16	28	98	2	31	40	3	218
	%	2.6	4.5	15.8	0.3	5.0	6.4	0.5	35.0
Total	N	36	77	301	8	97	85	17	621
	%	5.8	12.4	48.5	1.3	15.6	13.7	2.8	100.0

Table 39. Family income or students total income: Reverse transfer students enrolled in vocational-technical and arts and sciences programs

	Low income			Middle income				High income			
	-3000	3000 4900	5000 5900	6000 7400	7500 8900	9000 11900	12000 14900	15000 17900	18000+	Do not know	Total
N	218	113	91	62	62	78	146	92	48	45	955
%	22.9	11.8	9.5	6.5	6.5	8.2	15.3	9.6	5.0	5.7	100.0
Total	442 students (44.2%)			342 students (36.5%)				140 students (14.6%)		31 stu. (5.7%)	
Total	784 students (80.7%)							140 students (14.6%)		31 stu. (5.7%)	

Table 40. Family income or students total income: Reverse transfer students enrolled in vocational-technical or arts and sciences programs

Program		Low income			Middle income				High income		Do not know	Total
		-3000	3000 4900	5000 5900	6000 7400	7500 8900	9000 11900	12000 14900	15000 17900	18000+		
Vocational-technical	N	78	48	33	16	18	31	56	33	9	12	334
	%	8.2	5.0	3.5	1.7	1.9	3.2	5.9	3.5	0.9	1.3	35.0
Income groups	N	159 students			121 students				42 students		12 stu.	
	%	(16.7%)			(12.7%)				(4.4%)		(1.3%)	
Arts and sciences	N	140	65	58	46	44	47	90	59	39	33	621
	%	14.7	6.8	6.1	4.8	4.6	4.9	9.4	6.1	4.1	3.5	65.0
Income groups	N	263 students			227 students				98 students		33 stu.	
	%	(27.6%)			(23.7%)				(10.3%)		(3.5%)	
Total	N	218	113	91	62	62	78	146	92	48	45	955
	%	22.9	11.8	9.5	6.5	6.5	8.2	15.3	9.6	5.0	5.7	100.0

included 159 (16.7%) students; the middle income group, $6000 to $14,900, included 121 (12.7%) students; the high income group, $15,000 to $18,000 plus, included 32 (4.4%) students; and a group of 12 (1.3%) students did not state their family income.

The arts and sciences students were in the following income brackets: the low income bracket, less than $3000 to $5900, included 263 (27.6%) students; the middle income group, $6000 to $14,900, included 227 (23.7%) students; the high income group, $15,000 to $18,000 plus, included 98 (10.3%) students; and 33 (3.5%) students did not state their incomes.

Table 41 points out the family income or students' total income, by sex of reverse transfer students who are enrolled in vocational-technical programs. The vocational-technical male students were in the following income groups. The low income group, less than $3000 to $5900, included 71 (21.3%) students; the middle income group, $6000 to $14,900, included 80 (24.8%) students; the high income group, $15,000 to over $18,000, included 10 (3.0%) students; and 29 (8.2%) students who did not state their family income. The vocational-technical female students were in the following income groups. The low income group, less than $3000 to $5900, included 26 (7.8%) students; the middle income group, $6000 to $14,900, included 58 (17.4%) students; the high income group, $15,000 to over $18,000, included 11 (3.3%) students; and 49 (14.7%) female students did not state their family income. The total number of male and female students enrolled in the vocational-technical programs by income were as follows: low income, less than $3000 to $5900, included 97 (29.1%) students; the middle income, $6000 to $14,900,

Table 41. Family income or students total income: By sex of reverse transfer students enrolled in vocational-technical programs

Vocational-technical		Low income			Middle income				High income		Do not know	Total
		-3000	3000 4900	5000 5900	6000 7400	7500 8900	9000 11900	12000 14900	15000 17900	18000+		
Males	N	33	27	11	10	21	31	18	5	5	29	190
	%	9.9	8.1	3.3	3.0	6.3	9.3	5.4	1.5	1.5	8.2	56.9
Income groups	N	71 students			80 students				10 students		29 stu.	
	%	(21.3%)			(24.8%)				(3.0%)		(8.2%)	
Females	N	15	6	5	8	10	25	15	4	7	49	144
	%	4.5	1.8	1.5	2.4	3.0	7.5	4.5	1.2	2.1	14.7	43.1
Income groups	N	26 students			58 students				11 students		49 stu.	
	%	(7.8%)			(17.4%)				(3.3%)		(14.7%)	
Total	N	48	33	16	18	31	56	33	9	12	78	334
	%	14.4	9.9	4.8	5.4	9.3	16.8	9.9	2.7	3.6	23.4	100.0
	%	29.1			41.4				6.3		23.4	

included 138 (41.4%) students; the high income, $15,000 to over $18,000, included 21 (6.3%) students and 78 (23.4%) students did not state their family income.

Table 42 points out the family income or students' total income divided by sex of reverse transfer students enrolled in arts and sciences programs. The arts and sciences male students were in the following income groups. The low income group, less than $3000 to $5900, included 128 (15.3%) students; the middle income group, $6000 to $14,900, included 145 (18.0%) students; the high income groups, $15,000 to over $18,000, included 51 (8.2%) students; and 79 (12.7%) students did not indicate their family income groups. The arts and sciences female students were in the following income groups. The low income group, less than $3000 to $5900, included 41 (6.5%) students; the middle income group, $6000 to $14,900, indicated 95 (15.4%) female students; the high income group, $15,000 to over $18,000, indicated 21 (3.4%) students; and 61 (9.8%) female students did not state a family salary.

The total number of male and female students enrolled in the arts and sciences programs by income were as follows: low income, less than $3000 to $5900, included 169 (27.2%) male and female students; the middle income group, $6000 to $14,900, 240 (38.7%) male and female students; the high income group, $15,000 to over $18,000, 72 (11.6%) male and female students; 140 (22.5%) male and female students did not state their family salary.

Table 43 indicates distance traveled to school, one way, by all reverse transfer students. Those students who traveled less than 10

Table 42. Family income or students total income: By sex of reverse transfer students enrolled in arts and sciences programs

Arts and sciences		Low income			Middle income				High income		Do not know	Total
		-3000	3000 4900	5000 5900	6000 7400	7500 8900	9000 11900	12000 14900	15000 17900	18000+		
Males	N	48	41	39	30	31	51	33	29	22	79	403
	%	7.7	6.6	6.3	4.8	5.0	8.2	5.3	4.7	3.5	12.7	65.0
Income groups	N	128 students			145 students				51 students		79 stu.	
	%	(15.3%)			(18.0%)				(8.2%)		(12.7%)	
Females	N	17	17	7	14	16	39	26	10	11	61	218
	%	2.7	2.7	1.1	2.3	2.6	6.3	4.2	1.6	1.8	9.8	35.0
Income groups	N	41 students			95 students				21 students		61 stu.	
	%	(6.5%)			(15.4%)				(3.4%)		(9.8%)	
Total	N	65	58	46	44	47	90	59	39	33	140	621
	%	10.5	9.3	7.4	7.1	7.6	14.5	9.5	6.3	5.3	22.5	100.0
	%	27.2			38.7				11.6		22.5	

miles totaled 564 (59.1%) students; those traveling 11-25 miles totaled 278 (29.1%) students; and those traveling 26-50 miles numbered 103 (10.8%) students for a total of 955 students.

Table 43. Distance traveled to school, one way. All reverse transfer students

	Less than 10 miles	11-25 miles	26-50 miles	More than 50 miles	Total
N	564	278	103	10	955
%	59.1	29.1	10.8	1.0	100.0

Table 44 gives the miles traveled to school, one way, by reverse transfer students enrolled in vocational-technical and arts and sciences programs.

The vocational-technical programs had 195 (20.4%) students traveling less than 10 miles; there were 97 (10.2%) students traveling 11-25 miles; traveling 26-50 miles totaled 37 (3.9%) students; and traveling more than 50 miles numbered 5 (0.5%) students. There was a total of 334 (35%) students enrolled in the vocational-technical programs.

The arts and sciences programs had 369 (38.6%) students traveling less than 10 miles; there were 181 (19%) students traveling 11-25 miles; traveling 26-50 miles totaled 66 (6.9%) students, and traveling more than 50 miles totaled 5 (0.5%) students. There were 621 (65%) enrolled in arts and sciences programs.

Table 44. Distance traveled to school, one way. Reverse transfer students choosing vocational-technical or arts and sciences programs

Program		Less than 10 miles	11-25 miles	26-50 miles	More than 50 miles	Total
Vocational-technical	N	195	97	37	5	334
	%	20.4	10.2	3.9	0.5	35.0
Arts and sciences	N	369	181	66	5	621
	%	38.6	19.0	6.9	0.5	65.0
Total	N	564	278	103	10	955
	%	59.1	29.1	10.8	1.0	100.0

Table 45 gave an additional breakdown by sex of the distance traveled to school, one way, by reverse transfer students in the vocational-technical programs.

The vocational-technical programs had 102 (30.5%) male students driving less than 10 miles to school. There were 93 (27.8%) female students also driving this distance. Males driving 11-25 miles totaled 60 (18.0%) students while females had 37 (11.1%) students. At 26-50 miles the males had 25 (7.5%) students driving while the females had 12 (3.6%) students driving this distance. At more than 50 miles of driving the sexes were about even, 3 (0.9%) male students; and 2 (0.6%) female students. As the driving distance increased the percent of male drivers increased and the percent of female drivers decreased.

Table 45. Distance traveled to school, one way. Reverse transfer students divided by males and females entering vocational-technical programs

Vocational-technical		Less than 10 miles	11-25 miles	26-50 miles	More than 50 miles	Total
Males	N	102	60	25	3	190
	%	30.5	18.0	7.5	0.9	56.9
Females	N	93	37	12	2	144
	%	27.8	11.1	3.6	0.6	43.1
Total	N	195	97	37	5	334
	%	58.4	29.0	11.1	1.5	100.0

Table 46 gave an additional breakdown by sex of the distance traveled to school, one way, by reverse transfer students in the arts and sciences programs. The arts and sciences programs had 230 (37.0%) male students driving less than 10 miles to school. There were also 139 (22.4%) female students also driving this distance. Males driving 11-25 miles totaled 119 (19.2%) students, while females had 62 (10.0%) students. At 26-50 miles the males had 50 (8.1%) students driving while the females had 16 (2.6%) students driving. At more than 50 miles of driving there were 4 (0.6%) male students and 1 (0.2%) female students driving to school. As the driving distances increased the percent of male drivers increased rather dramatically and the female drivers decreased. This difference was more pronounced in the arts and sciences than in the vocational-technical programs.

Table 46. Distance traveled to school, one way. Reverse transfer students divided by males and females entering the arts and sciences programs

Arts and sciences		Less than 10 miles	11-25 miles	26-50 miles	More than 50 miles	Total
Males	N	230	119	50	4	403
	%	37.0	19.2	8.1	0.6	64.9
Females	N	139	62	16	1	218
	%	22.4	10.0	2.6	0.2	35.1
Total	N	369	181	66	5	621
	%	59.4	29.1	10.7	0.8	100.0

Table 47 designates the residence category while attending the community college of all reverse transfer students. There were 615 (64.4%) students who lived at home; 324 (33.9%) students roomed in private housing; and 16 (1.7%) students stayed in a dormitory.

Table 47. Residence category while attending the community colleges: All reverse transfer students

	Live at home	Room in private housing	Dormitory	Total
N	615	324	16	955
%	64.4	33.9	1.7	100.0

Table 48 designates the residence category of the reverse transfer students attending the community colleges that are enrolled in the vocational-technical or arts and sciences programs. In the vocational-technical programs 200 (20.9%) students live at home; 129 (13.5%) students room in private housing; and 5 (0.5%) students live in a dormitory. In the arts and sciences programs 415 (43.5%) students live at home; 195 (20.4%) students room in private housing; and 11 (1.2%) students live in the dormitory.

Table 48. Residence category while attending the community colleges: Reverse transfer students choosing vocational-technical or arts and sciences programs

Program		Live at home	Room in private housing	Dormitory	Total
Vocational-technical	N	200	129	5	334
	%	20.9	13.5	0.5	35.0
Arts and sciences	N	415	195	11	621
	%	43.5	20.4	1.2	65.0
Total	N	615	324	16	955
	%	64.4	33.9	1.7	100.0

Table 49 designates the residence category of the reverse transfer students attending the community colleges divided by males and females entering the vocational-technical programs. There were 121 (36.2%) male students living at home; 67 (20.1%) students room in private housing; 2

(0.6%) male students live in the dormitories. There are 79 (23.7%) female students living at home; 62 (18.6%) female students room in private housing; and 3 (0.9%) female students live in the dormitories. There is a total of 200 (59.9%) male and female vocational-technical students living at home; 129 (38.6%) male and female students room in private housing; 5 (1.5%) male and female students live in dormitories for a total of 334 students.

Table 49. Residence category while attending the community colleges: Reverse transfer students divided by males and females entering the vocational-technical programs

Vocational-technical		Live at home	Room in private housing	Dormitory	Total
Males	N	121	67	2	190
	%	36.2	20.1	0.6	56.9
Females	N	79	62	3	144
	%	23.7	18.6	0.9	43.1
Total	N	200	129	5	334
	%	59.9	38.6	1.5	100.0

Table 50 designates the residence category of the reverse transfer students attending the community colleges divided by male and females entering the arts and sciences programs. There are 256 (41.2%) male students living at home; 140 (22.5%) male students room in private housing and 7 (1.3%) male students room in the dormitories. There are 159 (25.6%)

female students living at home; 55 (8.9%) female students room in private housing and 4 (0.5%) female students live in the dormitories. There was a total of 415 (66.8%) male and female arts and sciences students living at home; 195 (31.4%) male and female students rooming in private housing and 11 (1.8%) male and female students residing in the dormitories for a total of 621 students.

Table 50. Residence category while attending the community colleges: Reverse transfer students divided by males and females entering the arts and sciences programs

Arts and sciences		Live at home	Room in private housing	Dormitory	Total
Males	N	256	140	7	403
	%	41.2	22.5	1.3	65.0
Females	N	159	55	4	218
	%	25.6	8.9	0.5	35.0
Total	N	415	195	11	621
	%	66.8	31.4	1.8	100.0

In Table 51 the plans for employment while in school for all reverse transfer students indicate 290 (30.4%) students do not plan to work; 239 (25.0%) students plan to work 15 hours or less per week; 261 (27.3%) students plan to work 15-30 hours per week and 165 (17.3%) students plan to work 30 plus hours each week.

Table 51. Plans for employment while in school: All reverse transfer students

	No employment	15 hours or less per week	15-30 hours per week	30+ hours per week	Total
N	290	239	261	165	955
%	30.4	25.0	27.3	17.3	100.0

Table 52 shows the plans for employment while in school by reverse transfer students entering vocational-technical and arts and sciences programs. Of the students entering the vocational-technical program 114 (11.9%) plan no employment; 98 (10.3%) students plan to work 15 hours or less per week; 87 (9.1%) students plan 16-30 hours per week and 35 (3.7%) students plan to work in excess of 30 hours per week. Students entering the arts and sciences program planning no employment number 176 (18.4%) students; those planning 15 hours or less, 141 (14.8%) students; 174 (18.2%) students plan 16-30 hours per week; while 130 (13.6%) students plan to work in excess of 30 hours.

Table 53 indicates plans for employment while in school by reverse transfer students divided into male and female students entering vocational-technical programs. Male students indicating plans for no employment number 47 (14.1%) students; 51 (15.3%) male students plan to work 15 hours or less per week; 62 (18.6%) male students 16-30 hours per week

Table 52. Plans for employment while in school: By reverse transfer students entering vocational-technical or arts and sciences programs

Program		No employment	15 hours or less per week	16-30 hours per week	30+ hours per week	Total
Vocational-technical	N	114	98	87	35	334
	%	11.9	10.3	9.1	3.7	35.0
Arts and sciences	N	176	141	174	130	621
	%	18.4	14.8	18.2	13.6	65.0
Total	N	290	239	261	165	955
	%	30.4	25.0	27.3	17.3	100.0

Table 53. Plans for employment while in school: By reverse transfer students divided into male and female students entering vocational-technical programs

Vocational-technical		No employment	15 hours or less per week	16-30 hours per week	30+ hours per week	Total
Males	N	47	51	62	30	190
	%	14.1	15.3	18.6	9.0	56.9
Females	N	67	47	25	5	144
	%	20.1	14.1	7.5	1.5	43.1
Total	N	114	98	87	35	334
	%	34.1	29.4	26.1	10.5	100.0

and 30 (9%) male students plan to work 30 hours or more per week.

Female students who indicated plans for no employment totaled 67 (20.1%) students; 47 (14.1%) female students plan to work 15 hours or less per week; 25 (7.5%) female students plan 16-30 hours per week and 5 (1.5%) female students plan to work 30 hours or more per week.

The total number of reverse transfer students in vocational-technical programs indicate 114 (34.1%) students plan no employment; 98 (29.4%) students plan to work 15 hours or less per week; 87 (26.1%) students plan to work 16-30 hours per week while 35 (10.5%) students plan to work over 30 hours per week.

Table 54 indicates plans for employment while in school by reverse transfer students divided by male and female students entering the arts and sciences programs. Male students indicating plans for no employment number 88 (14.2%) students; 100 (16.1%) male students plan to work 15 hours or less per week; 121 (19.5%) male students plan to work 16-30 hours per week and 94 (15.1%) male students plan to work 30 hours or more per week.

Female students who indicated plans for no employment totaled 88 (14.2%) students; 41 (6.6%) female students plan to work 15 hours or less per week; 53 (8.5%) female students plan to work 16-30 hours per week while 36 (5.8%) female students plan to work over 30 hours per week.

The total number of reverse transfer students in the arts and sciences programs indicate 176 (28.3%) students plan no employment; 141 (22.7%) students plan to work 15 hours or less per week; 174 (28.0%) students plan 16-30 hours of work per week while 130 (20.9%) plan to

work 30 plus hours per week.

Table 54. Plans for employment while in school: By reverse transfer students divided into male and female students entering the arts and sciences programs

Arts and sciences		No employment	15 hours or less per week	16-30 hours per week	30+ hours per week	Total
Males	N	88	100	121	94	403
	%	14.2	16.1	19.5	15.1	65.0
Females	N	88	41	53	36	218
	%	14.2	6.6	8.5	5.8	35.0
Total	N	176	141	174	130	621
	%	28.3	22.7	28.0	20.9	100.0

Table 55 states the most important reasons given by the reverse transfer students for attending the community college.

There were 419 (43.9%) students who chose to attend the community colleges because of the programs offered by the colleges; cost, 219 (22.9%) students; and close to home, 125 (13.1%) students. The open door policy attracted 40 (4.2%) students; and other reasons, 152 (15.9%) students.

Table 56 states reasons for attending the community college given by students enrolled in the vocational-technical programs and those entering the arts and sciences programs. There were 334 (35%) students

Table 55. Most important reasons for attending the community college: All reverse transfer students

	Close to home	Cost	Program	Open door	Other	Total
N	125	219	419	40	152	955
%	13.1	22.9	43.9	4.2	15.9	100.0

enrolled in the vocational-technical programs and 621 (65%) students enrolled in the arts and sciences programs. In the vocational-technical programs, students gave the following reasons for attending the community college: close to home totaled 12 (1.3%) students; students listing cost as a factor totaled 20 (2.1%) students; program availability was the number one reason given by 281 (29.4%) students; open door, no students; other reasons 21 (2.2%) students. In arts and sciences 113 (11.8%) students cited close to home; cost was listed by 199 (20.8%) students; program availability listed by the most vocational-technical students was also the number one reason given by 138 (14.5%) students; open door, 40 (4.2%) students; and others 131 (13.7%) students.

Table 57 states the most important reasons given by reverse transfer students for attending the community college divided by sex and entering the vocational-technical programs. Reasons given by male students were as follows: close to home, 7 (2.1%) students; cost, 13 (3.9%) students; program, 159 (47.6%) students; others, 11 (3.3%)

Table 56. Most important reasons for attending the community college: Reverse transfer students choosing vocational-technical or arts and sciences programs

Program		Close to home	Cost	Program	Open door	Other	Total
Vocational-technical	N	12	20	281	0	21	334
	%	1.3	2.1	29.4	0.0	2.2	35.0
Arts and sciences	N	113	199	138	40	131	621
	%	11.8	20.8	14.5	4.2	13.7	65.0
Total	N	125	219	419	40	152	955
	%	13.1	22.9	43.9	4.2	15.9	100.0

Table 57. Most important reasons for attending the community college: Reverse transfer students divided by males and females entering vocational-technical programs

Vocational-technical		Close to home	Cost	Program	Open door	Other	Total
Males	N	7	13	159	0	11	190
	%	2.1	3.9	47.6	0.0	3.3	56.9
Females	N	5	7	122	0	10	144
	%	1.5	2.1	36.5	0.0	3.0	43.1
Total	N	12	20	281	0	21	334
	%	3.6	6.0	84.1	0.0	6.3	100.0

students. The males totaled 190 (56.9%) students of the total 334 students entering the vocational-technical programs. The reasons given by female students for attending were: close to home, 5 (1.5%) students; cost, 7 (2.1%) students; program, 122 (36.5%) students; other 10 (3.0%) students. The females totaled 144 students. The category, program availability attracted 281 (84.1%) male and female students of the total students in the reverse transfer situation. The open door category attracted no students.

Table 58 states the most important reasons given by reverse transfer students for attending the community college divided by sex and entering the arts and sciences programs. Reasons given by male students were as follows: close to home, 68 (11.0%) students; cost, 137 (22.1%) students; program, 85 (13.7%) students; open door, 32 (5.2%) students; others, 81 (13%) students. The males totaled 403 (65.0%) students of the total 621 students entering arts and sciences. The reasons given by female students for attending were: close to home, 45 (7.2%) students; cost, 62 (10.0%) students; program, 53 (8.5%) students; open door, 50 (8.1%) students; other, 50 (8.1%) students. The female students totaled 218 (35.1%).

According to Table 59 reverse transfer students planning to be employed in Iowa when their program or degree is completed revealed 373 (39.1%) students who planned to work in Iowa; 94 (9.8%) students indicated they would be employed outside the state; the largest group were the undecided, 488 (51.1%) students.

Table 58. Most important reasons for attending the community college: Reverse transfer students divided by males and females entering the arts and sciences programs

Arts and Sciences		Close to home	Cost	Program	Open door	Other	Total
Males	N	68	137	85	32	81	403
	%	11.0	22.1	13.7	5.2	13.0	65.0
Females	N	45	62	53	8	50	218
	%	7.2	10.0	8.5	1.3	8.1	35.0
Total	N	113	199	138	40	131	621
	%	18.2	32.0	22.2	6.4	21.1	100.0

Table 59. All reverse transfer students planning to be employed in Iowa when program or degree is completed

	Yes	No	Undecided	Total
N	373	94	488	955
%	39.1	9.8	51.1	100.0

Table 60 shows the reverse transfer students entering a vocational-technical program planning to be employed in Iowa upon completion of their program were 144 (15.1%) students; 28 (2.9%) students indicated they did not plan to work in Iowa. The largest group were the undecided, 162 (17.0%) students. The total number of vocational-technical students

was 334 (35.0%).

The arts and sciences students planning to be employed in Iowa after completing their degree was 229 (24.0%) students; 66 (6.9%) students indicated they did not plan to work in Iowa. The largest group was the undecided category, 326 (34.1%) students.

Total figures for both divisions show 373 (39.1%) students planning to work in Iowa; 94 (9.8%) students not planning to work in Iowa. Over one-half the group, 488 (51.1%) students were undecided about staying in Iowa to work after graduation.

Table 60. All reverse transfer students planning to be employed in Iowa when programs are completed choosing vocational-technical or arts and sciences programs

Program		Yes	No	Undecided	Total
Vocational-technical	N	144	28	162	334
	%	15.1	2.9	17.0	35.0
Arts and sciences	N	299	66	326	621
	%	24.0	6.9	34.1	65.0
Total	N	373	94	488	955
	%	39.1	9.8	51.1	100.0

Table 61 sets forth the male and female reverse transfer students enrolled in the vocational-technical programs who plan to be employed in Iowa when their program is completed. There were 81 (24.3%) male students planning to work in Iowa; 17 (5.1%) do not plan to work in Iowa, and 92

(27.5%) students were undecided about working in Iowa. The total number of male students in the vocational-technical programs was 190 or 56.9%.

There were 63 (18.9%) of the female students planning to work in Iowa and 11 (3.3%) students said they do not plan to work in Iowa. There were 70 (21%) students who were undecided. The total number of female students in the vocational-technical programs was 144 (43.1%).

The total number of students planning to work in Iowa after completing the vocational-technical program was 144 (43.2%). Those not planning to work in Iowa totaled 28 (8.4%). Students undecided about working in Iowa after completing their program totaled 162 (48.5%) students.

The total number of reverse transfer students in vocational-technical programs was 334 male and female students.

Table 61. All reverse transfer students planning to be employed in Iowa when program is completed divided by males and females entering vocational-technical programs

Vocational-technical		Yes	No	Undecided	Total
Males	N	81	17	92	190
	%	24.3	5.1	27.5	56.9
Females	N	63	11	70	144
	%	18.9	3.3	21.0	43.1
Total	N	144	28	162	334
	%	43.2	8.4	48.5	100.0

Table 62 shows the reverse transfer male and female students enrolled in the arts and sciences programs who plan to be employed in Iowa when their degree is completed. It revealed that 142 (22.9%) male students plan to work in Iowa; 45 (7.2%) male students do not plan to work in Iowa; and 216 (34.8%) male students were undecided about planning to be employed in Iowa. The total number of reverse transfer male students in the arts and sciences programs totaled 403 (64.9%).

There were 87 (14.0%) female students who plan to work in Iowa and 21 (3.4%) female students that said they do not plan to stay in Iowa. There were 110 (17.7%) female students who were undecided about working in Iowa.

The total number of reverse transfer students in the arts and sciences programs planning to work in Iowa was 229 (36.9%); those not planning to work in Iowa, 66 (10.6%) students. Those students who were undecided totaled 326 (52.5%).

The total number of reverse transfer students in the arts and sciences programs was 403 male and 218 female students totaling 621 students.

Table 63 gave the parents' contribution to this year's expenses for all reverse transfer students. There were 555 (58.1%) students that said they received no help; 110 (11.5%) students reported 25% or less in contributions while 46 (4.8%) students indicated 26-50% help. There were 52 (5.4%) students who received 51-75% aid and 192 (20.1%) students who indicated 76-100% help from their parents.

Table 62. All reverse transfer students planning to be employed in Iowa when program is completed divided by males and females entering arts and sciences programs

Arts and sciences		Yes	No	Undecided	Total
Males	N	142	45	216	403
	%	22.9	7.2	34.8	65.0
Females	N	87	21	110	218
	%	14.0	3.4	17.7	35.0
Total	N	229	66	326	621
	%	36.9	10.6	52.5	100

Table 63. Parents' contribution to this year's educational expenses: All reverse transfer students

	None	25% or less	26-50%	51-75%	76-100%	Total
N	555	110	46	52	192	955
%	58.1	11.5	4.8	5.4	20.1	100.0

Table 64 presented the parents' contribution to this year's educational expenses to reverse transfer students entering vocational-technical or arts and sciences programs. Students in the vocational-technical programs received the following breakdown: 180 (18.8%) students reported none; 41 (4.3%) students reported 25% or less; 16 (1.7%) students

reported 26-50%; 19 (2.0%) students reported 51-75%; 78 (8.2%) students reported 76-100%.

The arts and sciences students received the following support: 375 (39.3%) students reported none; 69 (7.2%) students reported 25% or less; 30 (3.1%) students received 26-50%; 33 (3.5%) students reported 51-75%; 114 (11.9% students reported receiving 75-100% parental support.

Table 64. Parents' contribution to this year's educational expenses to reverse transfer students entering vocational-technical or arts and sciences programs

Program		None	25% or less	26-50%	51-75%	76-100%	Total
Vocational-technical	N	180	41	16	19	78	334
	%	18.8	4.3	1.7	2.0	8.2	35.0
Arts and sciences	N	375	69	30	33	114	621
	%	39.3	7.2	3.1	3.5	11.9	65.0
Total	N	551	110	46	52	192	955
	%	58.1	11.5	4.8	5.4	20.1	100.0

Table 65 listed the parents' contribution to this year's educational expenses to reverse transfer students divided by males and females entering vocational-technical programs. There were 124 (37.1%) male students indicating no support; 24 (7.2%) male students receiving 25% or less; 8 (2.4%) male students expecting 26-50%; 9 (2.7%) male students indicating 51-75%; and 25 (7.5%) male students expecting 76-100% parental support.

There was a total of 190 (56.9%) male students enrolled in the vocational-technical programs.

There were 56 (16.8%) female students who indicated no support; 17 (5.1%) female students receiving 25% or less; 8 (2.4%) female students receiving 26-50% support; 10 (3.0%) female students indicating 51-75%; and 53 (15.9%) female students expecting 76-100% parental help. There was a total of 144 female students enrolled in vocational-technical programs.

Table 65. Parents' contribution to this year's educational expenses to reverse transfer students divided by males and females entering vocational-technical programs

Vocational-technical		None	25% or less	26-50%	51-75%	76-100%	Total
Males	N	124	24	8	9	25	190
	%	37.1	7.2	2.4	2.7	7.5	56.9
Females	N	56	17	8	10	53	144
	%	16.8	5.1	2.4	3.0	15.9	43.1
Total	N	180	41	16	19	78	334
	%	53.9	12.3	4.8	5.7	23.4	100.0

Table 66 lists the parents' contribution to this year's educational expenses to reverse transfer students divided by male and female students entering arts and sciences programs. There were 246 (39.6%) male students who indicated no help; 47 (7.6%) male students receiving 25% or less; 18 (2.9%) male students reported 26-50% support; 22 (3.5%) male

students expecting 51-75% help; and 70 (11.3%) male students expecting 76-100% parental support. There was a total of 403 (65.0%) male students enrolled in the arts and sciences programs.

There were 129 (20.8%) female students who indicated no parental support; 22 (3.5%) female students receiving 25% or less; 12 (1.9%) female students receiving 26-50% support; 11 (1.8%) female students expecting 51-75% support; and 44 (7.1%) female students expecting 76-100% parental help. There was a total of 218 (35%) female students enrolled in the arts and sciences programs.

Table 66. Parents' contribution to this year's educational expenses to reverse transfer students divided by males and females entering arts and sciences programs

Arts and sciences		None	25% or less	26-50%	51-75%	76-100%	Total
Males	N	246	47	18	22	70	403
	%	39.6	7.6	2.9	3.5	11.3	65.0
Females	N	129	22	12	11	44	218
	%	20.8	3.5	1.9	1.8	7.1	35.0
Total	N	375	69	30	33	114	621
	%	60.4	11.1	4.8	5.3	18.4	100.0

Inspection of Table 67 revealed that 188 (19.7%) reverse transfer students are veterans. There were 767 (80.3%) reverse transfer students who were not veterans. There was a total of 955 reverse transfer students.

Table 67. Reverse transfer students: Are you a veteran

	Yes	No	Total
N	188	767	955
%	19.7	80.3	100.0

An examination of Table 68 indicates that reverse transfer students who entered a vocational-technical program enrolled as a veteran totaled 58 (6.1%) students; nonveterans numbered 276 (28.9%) students for a total vocational-technical enrollment of 334 (35.0%) students.

Arts and sciences reverse transfer students who qualified as a veteran numbered 130 (13.6%) students. Nonveterans in arts and sciences totaled 491 (51.4%) of the enrollment.

The total number of veterans enrolled was 188 (19.7%) students; 767 (80.3%) of the reverse transfer students were nonveterans.

Table 68. Reverse transfer students: Enrolled as a veteran choosing vocational-technical or arts and sciences programs

Program		Yes	No	Total
Vocational-technical	N	58	276	334
	%	6.1	28.9	35.0
Arts and sciences	N	130	491	621
	%	13.6	51.4	65.0
Total	N	188	767	955
	%	19.7	80.3	100.0

Table 69 shows the number of male and female reverse transfer students enrolled in the vocational-technical programs. There were 58 (17.4%) male veterans and 132 (39.5%) nonveterans. There were no reverse transfer veteran female students who entered any vocational-technical programs.

The total number of veterans who entered the vocational-technical programs was 58 (17.4%) students. There were 276 (82.6%) nonveterans for a total number of 334 male and female students enrolled in vocational-technical programs.

Table 69. Reverse transfer students enrolled as a veteran divided by males and females entering the vocational-technical programs

Vocational-technical		Yes	No	Total
Males	N	58	132	190
	%	17.4	39.5	56.9
Females	N	0	144	144
	%	0.0	43.1	43.1
Total	N	58	276	334
	%	17.4	82.6	100.0

Table 70 shows the number of male and female reverse transfer students who enrolled in the arts and sciences programs. There were 125 (20.1%) male students, and 278 (44.8%) nonveterans. Female students who qualified as veterans numbered 5 (0.8%) while nonveterans totaled 213 (34.3%) students.

Table 70. Reverse transfer students enrolled as veterans divided by males and females entering the arts and sciences programs

Arts and sciences		Yes	No	Total
Males	N	125	278	403
	%	20.1	44.8	65.0
Females	N	5	213	218
	%	0.8	34.3	35.0
Total	N	130	491	621
	%	20.9	79.1	100.0

The total number of veterans who entered the arts and sciences programs was 130 (20.9%) students; and 491 (79.1%) nonveteran students for a total of 621 male and female reverse transfer students enrolled in arts and sciences programs.

Student Achievement

This section views student achievement by comparing the grade point average earned by the reverse transfer student in high school and the area school. Table 71 summarizes the changes that took place in grade point achievement of the reverse transfer students in high school and achievement of these same groups later in the area schools. Also, the high school and area school grade point averages of reverse transfer students show that 44% of the male students and 32.7% of the female students

Table 71. Comparative change between the reverse transfer students' high school grade point average and the grade point average achieved at the area school

H.S. grade point average	Male students N = 536				Female students N = 301			
	High school GPA		Area school GPA		High school GPA		Area school GPA	
	Arts and sciences %	Vocational-Technical %	Arts and sciences %	Vocational-Technical %	Arts and sciences %	Vocational-Technical %	Arts and sciences %	Vocational-Technical %
Less than 1.99	33.4	10.6	20.9	4.8	24.0	8.7	11.2	5.5
	Total (44.0)		Total (25.7)		Total (32.7)		Total (16.7)	
2.00 - 2.99	31.2	12.9	31.0	11.3	24.9	15.6	25.2	10.6
3.00 - 4.00	7.8	4.1	20.5	11.5	16.9	9.9	29.2	18.3
Total %	72.4	27.6	72.4	27.6	65.8	34.2	65.6	34.4
Total N	388	148	388	148	198	103	198	103

earned less than a 1.99 grade point average in high school. Comparing the area school grade point average achieved by this same student group, the percent of students with less than a 1.99 college grade point average was 25.7% for the male students and 16.7% for the female students. This comparison appears to support the view that this group of reverse transfer students achieved a higher grade point average in the area school. The comparative percentages of all students in arts and sciences remained about the same at the 2.00-2.99 grade point level. Vocational-technical male students showed a slight drop in achievement. Note that there were 12.9% of the male students with a high school grade point average in the 2.00-2.99 range compared with an area school grade point average of 11.3% in the college group. The percentage of female students enrolled in the vocational-technical area at this grade level of 2.00-2.99 dropped from 15.6% to 10.6%. The largest percentage changes appeared to occur at the grade point level of 3.00-4.00. The percentage of male students achieving at this level in arts and sciences increased from 7.8% in high school to 20.5% in the area college. At the 3.00-4.00 grade point level there is a similar change for male students in the vocational-technical area from 4.1% in high school to 11.5% in the area college. The percentage of female students in the arts and sciences program with a grade point average of 3.00-4.00 was 16.9% in high school. This percentage of female students increased to 29.2% in the area school. The percentage of female students in the vocational-technical program achieving a grade point average of 3.00-4.00 was 9.9% in high school. This percentage of female students increased to 18.3% in the area college.

American College Test

Tables 72 through 76 indicate a frequency distribution of American College Test (ACT) scores made by reverse transfer male and female students in arts and sciences and vocational-technical programs. These results showed that the American College Test scores in English, mathematics, social studies, natural science, and the ACT composite score at the 0-10 scale level had a range of 32.3% to 36.4% for males and 35.5% to 38.5% for females. According to these data, the fact that many of the area school students are in the lower part of the academic scale as measured by the American College Tests is reinforced. It also appears that the percentage of male and female students making low scores is about equal for each sex. This seems to hold true throughout the various levels of the five test reports. The ACT scoring scale from 15-24 contains a range for the male students of 36.2% to 47.7% and 37.5% to 52.9% for the female students, the female students having a slightly higher percentage at this level. The arts and sciences division consistently has at least twice the percentage of students (men and women) at the lowest scoring level, 0-10, on the American College Test reports than does the vocational-technical division. This trend then reverses itself on all four tests throughout the five scoring levels, 11-30+ with the exception of ACT 1 at the 30+ level where the male percentage was .2 for both groups. There are some obvious obligations regarding planning, counseling and teaching.

Table 72. Achievement: ACT English test 1

ACT 1	Frequency distribution by reverse transfer students					
	Male students N = 536			Female students N = 301		
	Arts and sciences %	Vocational-technical %	Total %	Arts and sciences %	Vocational-technical %	Total %
0 - 10	25.9	10.4	36.4	24.6	11.0	35.5
11 - 14	8.8	3.9	12.7	2.3	1.0	3.3
15 - 19	20.7	6.9	27.6	14.3	10.0	24.3
20 - 24	14.2	5.4	19.6	18.9	9.6	28.6
25 - 29	2.6	0.7	3.4	4.7	2.3	7.0
30+	0.2	0.2	0.4	1.0	0.3	1.3
Total %	72.4	27.6	100.0	65.8	34.2	100.0
Total N	388	148	536	198	103	301

Table 73. Achievement: ACT mathematics test 2

ACT 2	Frequency distribution by reverse transfer students					
	Male students N = 536			Female students N = 301		
	Arts and sciences %	Vocational-technical %	Total %	Arts and sciences %	Vocational-technical %	Total %
0 - 10	24.1	10.1	34.1	25.2	12.3	37.5
11 - 14	7.3	2.1	9.3	7.0	4.7	11.6
15 - 19	16.2	5.0	21.3	13.3	6.6	19.9
20 - 24	9.9	5.0	14.9	11.3	6.3	17.6
25 - 29	11.0	4.1	15.1	8.6	3.3	12.0
30+	3.9	1.3	5.2	0.3	1.0	1.3
Total %	72.4	27.6	100.0	65.8	34.2	100.0
Total N	388	148	536	198	103	301

Table 74. Achievement: ACT social studies test 3

ACT 3	Frequency distribution by reverse transfer students					
	Male students N = 536			Female students N = 301		
	Arts and sciences %	Vocational-technical %	Total %	Arts and sciences %	Vocational-technical %	Total %
0 - 11	26.3	10.4	36.8	26.6	12.0	38.5
12 - 14	4.1	1.9	6.0	3.0	2.0	5.0
15 - 19	14.9	4.7	19.6	10.3	6.6	16.9
20 - 24	14.9	6.3	21.3	15.0	9.0	23.9
25 - 29	9.9	3.5	13.4	9.3	4.7	14.0
30+	2.2	0.7	3.0	1.7	0.0	1.7
Total %	72.4	27.6	100.0	65.8	34.2	100.0
Total N	388	148	536	198	103	301

Table 75. Achievement: ACT natural sciences test 4

ACT 4	Frequency distribution by reverse transfer students					
	Male students N = 536			Female students N = 301		
	Arts and sciences %	Vocational-technical %	Total %	Arts and sciences %	Vocational-technical %	Total %
0 - 11	22.4	9.9	32.3	24.9	11.6	36.5
12 - 14	6.3	1.9	8.2	5.6	1.3	7.0
15 - 19	16.8	5.2	22.0	14.6	9.0	23.6
20 - 24	10.1	4.3	14.4	10.0	7.6	17.6
25 - 29	12.7	4.5	17.2	8.3	4.7	13.0
30+	4.1	1.9	6.0	2.3	0.0	2.3
Total %	72.4	27.8	100.0	65.8	34.2	100.0
Total N	388	148	536	198	103	301

Table 76. Achievement: ACT composite scores test 5

ACT 5	Frequency distribution by reverse transfer students					
	Male students N = 536			Female students N = 301		
	Arts and sciences %	Vocational-technical %	Total %	Arts and sciences %	Vocational-technical %	Total %
0 - 11	23.1	9.7	32.8	24.3	11.3	35.5
12 - 14	4.7	1.7	6.3	3.3	0.0	3.3
15 - 19	19.8	6.0	25.7	16.6	10.3	26.9
20 - 24	15.7	6.3	22.0	12.6	11.0	23.6
25 - 29	8.6	3.7	12.3	8.6	1.7	10.3
30+	0.6	0.2	0.7	0.3	0.0	0.3
Total %	72.4	27.6	100.0	65.8	34.2	100.0
Total N	388	148	536	198	103	301

Means and Standard Deviations

This view of student achievement begins a comparison of the achievement of the reverse transfer students with their counterpart, the native students, those students who graduated from high school and enrolled directly in an area college. Examination of Table 77 gives the mean scores and standard deviations for four groups of students. These are the reverse transfer students entering the arts and sciences or the vocational-technical programs, and the native students entering the arts and sciences or the vocational-technical programs. The grade point average earned while in high school for the four groups covers a mean high school grade point range of 2.38, standard deviation 0.52, for native students entering a vocational-technical program to a mean high school grade point average of 2.51, standard deviation 0.58 for the reverse transfer students entering vocational-technical programs. The reverse transfer and native students entering arts and sciences programs each had a mean high school grade point average of 2.44 with a standard deviation of .62 and .60 respectively. The high school percentile rank in class ranged from the 52nd percentile rank for the native students entering a vocational-technical program to the 46th percentile rank for the reverse transfer students entering a vocational-technical program. The native students enrolled in vocational-technical programs have a mean high school grade point average of 2.38, standard deviation .52, compared to a mean high school grade point average of 2.51, standard deviation .58, for those students in the arts and sciences program.

Table 77. Achievement data: Means and standard deviations. Reverse transfer students achievement in arts and sciences and vocational-technical programs. Native students achievement in arts and sciences and vocational-technical programs

Variable	Reverse transfer students achievement in:				Native students achievement in:			
	Arts and sciences		Vocational-technical		Arts and sciences		Vocational-technical	
	Mean	Stan. dev.	Mean	Stan. dev.	Mean	Stan. dev.	Mean	Stan. dev.
	N = 346		N = 138		N = 374		N = 94	
GPA H.S.	2.44	0.60	2.51	0.58	2.44	0.62	2.38	0.52
H. S. percentile	0.48	0.25	0.46	0.25	0.49	0.26	0.52	0.22
ACT 1 Eng.	19.44	4.77	19.16	4.36	18.33	4.96	17.95	4.41
ACT 2 Math.	21.02	5.99	20.98	5.81	19.77	6.64	18.22	6.53
ACT 3 Soc. sci.	21.14	5.97	21.09	5.13	19.89	6.03	18.30	5.66
ACT 4 Nat. sci.	21.80	5.73	21.85	5.27	20.92	5.66	20.73	5.18
ACT 5 Comp.	20.96	4.66	20.99	4.23	19.83	4.88	18.90	4.25
Area GPA	2.58	0.76	2.94	0.86	2.46	0.72	2.59	0.71
EQ HRS. (Area)	31.78	17.66	46.98	19.95	39.37	19.85	41.78	22.40
Total N	484				468			

The American College Tests measure student achievement in the areas of English (ACT 1), mathematics (ACT 2), and natural sciences (ACT 4). A composite score of tests 1-4 makes up composite (ACT 5) score.

The American College Tests for the reverse transfer students entered in arts and sciences had a range of 19.44 for the English (ACT 1) test to 21.80 for the natural sciences (ACT 4). The composite score (ACT 5) was 20.96 with a standard deviation of 4.66. The native arts and sciences students' mean scores ranged from 18.33 to 20.92 with a composite (ACT 5) mean score of 19.83, standard deviation 4.88. The reverse transfer students in vocational-technical programs had a range of ACT mean scores from 19.16 to 21.85 with a composite score of 20.99, standard deviation 4.23. The native students entering vocational-technical programs had a range of ACT mean scores from 17.95 to 20.73 with a composite ACT score of 18.90, standard deviation 4.25

The reverse transfer student entering vocational-technical programs had the highest high school grade point averages (mean 2.51) college grade point average (mean 2.94) and ACT composite score (20.99). They also completed the greatest number of credit hours (46.96). Possibly the achievement reflects motivation and varied abilities as compared with the academic abilities measured by the ACT tests.

The native students had the lowest high school grade point average (mean of 2.38) and the lowest ACT scores (18.90 composite). However, they had the second highest area grade point average (mean of 2.59) and completed the second highest number of credit hours, (41.78). The information obtained from ACT tests and the achievement of students in high

school are used as predictors of students' chances of success in a particular college curriculum.

Correlation Between Variables

The Pearson product-moment coefficient of correlation was computed to determine the degree of relationship between the variables in each of the following groups:

Group 1. Reverse transfer students entering arts and sciences programs.

Group 2. Native students entering arts and sciences programs.

Group 3. Native students entering vocational-technical programs.

Group 4. Reverse transfer students entering vocational-technical programs.

Tables 78, 79, 80 and 81 present a comparison of relationships by student group, native and reverse transfer, between the variables, high school grade point average, high school percentile rank, American College Tests in English (ACT 1), mathematics (ACT 2), natural science (ACT 3), social science (ACT 4), and a composite score (ACT 5), grade point average, and credit hours earned in the area school.

In Table 78 the correlations for reverse transfer students entering arts and sciences compared with Table 79, native students entering arts and sciences, the correlations for high school percentile rank and high school grade point average is a negative -.814 compared to a negative -.868. In viewing Table 80, reverse transfer students, and

Table 78. Correlation matrix for reverse transfer students entering arts and sciences programs (N = 346)

	GPAHS.	H.S. pctile	ACT 1	ACT 2	ACT 3	ACT 4	ACT 5	Area GPA	EQ HRS
GPAHS	1.000								
H.S. pctile	-.814	1.000							
ACT 1	.521	-.576	1.000						
ACT 2	.408	-.452	.532	1.000					
ACT 3	.437	-.452	.630	.492	1.000				
ACT 4	.372	-.414	.568	.662	.636	1.000			
ACT 5	.513	-.558	.738	.809	.826	.869	1.000		
Area GPA	.403	-.439	.324	.163	.282	.199	.279	1.000	
EQ HRS	.084	-.020	-.009	-.009	.010	.020	-.000	.108	1.000

Table 79. Correlation matrix for native students entering the arts and sciences programs (N = 374)

	GPAHS	H.S. pctile	ACT 1	ACT 2	ACT 3	ACT 4	ACT 5	Area GPA	EQ HRS
GPAHS	1.000								
H.S. pctile	-.868	1.000							
ACT 1	.499	-.548	1.000						
ACT 2	.508	-.516	.511	1.000					
ACT 3	.430	-.466	.612	.555	1.000				
ACT 4	.405	-.477	.559	.610	.637	1.000			
ACT 5	.554	-.602	.789	.816	.835	.839	1.000		
Area GPA	.554	-.557	.440	.332	.403	.312	.441	1.000	
EQ HRS	.195	-.205	.129	.119	.190	.111	.167	.447	1.000

Table 80. Correlation matrix for reverse transfer students entering the vocational-technical programs (N = 138)

	GPAHS	H.S. pctile	ACT 1	ACT 2	ACT 3	ACT 4	ACT 5	Area GPA	EQ HRS
GPAHS	1.000								
H.S. pctile	-.609	1.000							
ACT 1	.370	-.581	1.000						
ACT 2	.222	-.392	.279	1.000					
ACT 3	.278	-.421	.478	.434	1.000				
ACT 4	.252	-.386	.378	.525	.636	1.000			
ACT 5	.332	-.533	.572	.749	.758	.817	1.000		
Area GPA	.263	-.341	.270	.156	.259	.276	.305	1.000	
EQ HRS	.161	-.021	-.207	.153	.049	.159	.090	.185	1.000

Table 81. Correlation matrix for native students entering the vocational-technical programs (N = 94)

	GPAHS	H.S. pctile	ACT 1	ACT 2	ACT 3	ACT 4	ACT 5	Area GPA	EQ HRS
GPAHS	1.000								
H.S. pctile	-.789	1.000							
ACT 1	.499	-.555	1.000						
ACT 2	.402	-.452	.383	1.000					
ACT 3	.165	-.123	.424	.469	1.000				
ACT 4	.291	-.264	.469	.497	.564	1.000			
ACT 5	.427	-.446	.704	.797	.791	.776	1.000		
Area GPA	.363	-.416	.379	.227	.155	.193	.293	1.000	
EQ HRS	.122	-.048	.158	.001	.127	.252	.150	.295	1.000

Table 81, native students, both groups entering vocational-technical programs have correlations with high school percentile rank and high school grade point average of -.609 and -.789 respectively.

The American College Tests 1-4 usually have a high correlation between each other. The composite score American College Test 5 (ACT 5) is a composite of the four American College Test scores and as might be expected has a high correlation with these tests. In Table 78 the American Test Scores have a correlation range of .492 to .896 for reverse transfer students entering arts and sciences programs. Table 79, native students entering arts and sciences programs shows a correlation range of American College Tests of .511 to .839. Tables 80 and 81 continue the comparison of reverse transfer and native students entering vocational-technical programs. The correlation range of the American College Tests are .279 to .817 for reverse transfers and .383 to .776 for native students entering the vocational-technical programs. The area college grade point average correlation with the high school grade point average indicates a higher correlation between these two variables for native and reverse transfer students entering arts and sciences (.403 - .554) as compared with those native and reverse transfer students entering vocational-technical programs (.263 - .363). The credit hours earned at the area school show little relationship to the other variables with the exception of a correlation of .447 with the area grade point average for native students entering the arts and sciences program.

Hypothesis Testing

The four null hypotheses were tested by using the independent variance t test for analysis of each group (91, p. 141).

Null Hypothesis 1: There are no significant differences between the reverse transfer students and native students based on the group means as measured by each of the dependent and independent variables.

Null hypothesis 1 was rejected as the results indicated significant differences at the .01 level on eight of the variables, the .05 level on two of the variables and no significant difference on one variable. The means for the eleven variables are shown on Table 82 along with the number of cases, standard deviation, "t" value, degrees of freedom and the significance for each variable.

Null Hypothesis 2: There are no significant differences in the group means of the reverse transfer students entering vocational-technical programs or those entering arts and sciences programs as measured by each of the dependent and independent variables listed in Table 83.

Null hypothesis 2 remained tenable. Table 83 gives the various achievement data. There were significant differences in three of the variables: area grade point average, number of hours earned at the area school, and sex of students. The differences were common to the students entering vocational programs as compared with the arts and sciences students (.05 level of significance). The people enrolling in

Table 82. Differences between the reverse transfer students and native students based on the group means as measured by each of the dependent and independent variables

Variable	Group	Number	Mean	Standard deviation	t value	Degrees freedom	Significance
Sex	Native	889	1.412	0.492	2.38	1735	.05
	Reverse transfer	848	1.356	0.472			
Age	Native	880	22.110	0.186	-5.29	1717	.01
	Reverse transfer	839	23.521	0.191			
Grade point high school	Native	697	2.387	0.619	-1.72	1331	NSD
	Reverse Transfer	636	2.445	0.619			
H.S. % rank class	Native	685	0.529	0.261	3.63	1319	.01
	Reverse transfer	636	0.477	0.261			
ACT 1 English	Native	559	18.202	5.286	-3.83	1128	.01
	Reverse transfer	571	19.455	5.687			

ACT 2 math.	Native	559	19.354	6.731	-4.20	1128	.01
	Reverse transfer	571	20.959	6.119			
ACT 3 soc. sci.	Native	559	19.565	6.612	-3.88	1128	.01
	Reverse transfer	571	21.016	5.928			
ACT 4 nat. sci.	Native	559	20.893	6.288	-2.44	1127	.05
	Reverse transfer	570	21.770	5.801			
ACT 5 composite	Native	555	19.487	4.772	-5.08	1124	.01
	Reverse transfer	571	20.918	4.687			
Area GPA	Native	802	2.517	0.774	-5.08	1564	.01
	Reverse	764	2.745	0.784			
Earned hrs. (area)	Native	785	35.966	21.575	2.82	1529	.01
	Reverse transfer	746	32.953	20.132			

Table 83. Differences in the group means of the reverse transfer students entering vocational-technical programs or those entering arts and sciences programs as measured by each of the dependent and independent variables

Variable	Group	Number	Mean	Standard deviation	t value	Degrees freedom	Significance
Sex	A and S	586	1.338	0.473	-2.00	835	.05
	V - T	251	1.410	0.493			
Age	A and S	581	23.577	5.679	0.70	829	NSD
	V - T	250	23.288	5.011			
Grade point high school	A and S	429	2.430	0.624	-0.92	633	NSD
	V - T	206	2.478	0.599			
H.S. % rank class	A and S	429	0.479	0.253	0.33	633	NSD
	V - T	206	0.471	0.277			
ACT 1 English	A and S	402	19.294	4.985	-1.05	569	NSD
	V - T	169	19.840	7.086			

ACT 2 math.	A and S	402	20.948	6.168	-0.48	569	NSD
	V - T	169	21.201	5.327			
ACT 3 soc. sci.	A and S	402	20.938	6.168	-0.48	569	NSD
	V - T	169	21.201	5.329			
ACT 4 nat. sci.	A and S	402	21.697	5.953	-0.47	568	NSD
	V - T	168	21.946	5.430			
ACT 5 composite	A and S	402	20.813	4.840	-0.82	569	NSD
	V - T	169	21.166	4.302			
Area GPA	A and S	536	2.654	0.769	-5.01	762	.01
	V - T	228	2.960	0.779			
Earned hrs. (area)	A and S	535	29.148	18.346	-8.62	744	.01
	V - T	211	42.603	21.248			

vocational programs earned more hours and achieved a higher grade point average (.01 level of significance) than those students enrolled in the arts and sciences program.

Null Hypothesis 3: There are no significant differences in the group means between the reverse transfer students entering vocational-technical programs or the native students entering vocational-technical programs as measured by each of the dependent and independent variables.

Null hypothesis 3 was rejected as the group means of seven variables indicated differences at the .01 level of significance and the .05 level on age. There were no significant differences on four variables: American College Tests one and four, sex and area school hours earned.

Null Hypothesis 4: There are no significant differences in the group means between the reverse transfer students entering the arts and sciences program or the native students entering the arts and sciences programs as measured by each of the dependent and independent variables as evidenced by the data in Table 85.

Null hypothesis 4 was rejected because the results indicated significant differences at the .01 or .05 level for every variable with the exception of no significant difference between sexes or between the variable high school grade point averages.

Table 84. Differences in the group means between the reverse transfer students entering vocational-technical programs or the native students entering vocational-technical programs as measured by each of the dependent and independent variables

Variable	Group	Number	Mean	Standard deviation	t value	Degrees freedom	Significance
Sex	Native	286	1.476	0.500	1.52	535	NSD
	Reverse transfer	251	1.410	0.493			
Age	Native	283	22.247	5.293	-2.32	531	.05
	Reverse transfer	250	23.288	5.011			
Grade point high school	Native	226	2.317	0.603	-2.80	430	.01
	Reverse transfer	206	2.479	0.599			
H.S. % rank class	Native	221	0.560	0.239	3.57	425	.01
	Reverse transfer	206	0.471	0.277			
ACT 1 English	Native	125	18.512	6.074	-1.69	292	NSD
	Reverse transfer	169	19.840	7.086			

ACT 2 math.	Native	125	18.200	6.847	-3.80	292	.01
	Reverse transfer	169	21.065	6.021			
ACT 3 soc. sci.	Native	125	18.752	6.202	-3.63	292	.01
	Reverse transfer	169	21.201	5.329			
ACT 4 nat. sci.	Native	125	20.928	7.471	-1.35	291	NSD
	Reverse transfer	168	21.946	5.430			
ACT 5 composite	Native	123	4.443	0.401	-4.38	290	.01
	Reverse transfer	169	4.302	0.331			
Area GPA	Native	258	2.635	0.742	-4.71	484	.01
	Reverse transfer	228	2.960	0.779			
Earned hrs. (area)	Native	242	40.518	21.095	-1.05	451	NSD
	Reverse	211	42.603	21.348			

Table 85. Differences in the group means between the reverse transfer students entering the arts and sciences program or the native students entering the arts and sciences programs as measured by each of the dependent and independent variables

Variable	Group	Number	Mean	Standard deviation	t value	Degrees freedom	Signif-icance
Sex	Native	600	1.380	0.486	1.51	11.84	NSD
	Reverse transfer	586	1.338	0.473			
Age	Native	595	22.047	5.633	-4.64	1174	.01
	Reverse transfer	581	23.577	5.679			
Grade point high school	Native	471	2.421	0.625	-0.23	898	NSD
	Reverse transfer	429	2.430	0.624			
H.S. % rank class	Native	464	0.5149	0.270	2.02	891	.05
	Reverse transfer	429	0.4794	0.253			
ACT 1 English	Native	434	18.1129	5.041	-3.40	834	.01
	Reverse transfer	402	19.2935	4.985			

ACT 2 math.	Native	434	19.687	6.668	-2.76	834	.01
	Reverse transfer	402	20.915	6.167			
ACT 3 soc. sci	Native	434	19.799	6.713	-2.55	834	.01
	Reverse transfer	402	20.938	6.168			
ACT 4 nat. sci.	Native	434	20.8825	5.913	-1.98	834	.05
	Reverse transfer	402	21.697	5.953			
ACT 5 composite	Native	432	19.653	4.853	-3.46	832	.01
	Reverse transfer	402	20.813	4.840			
Area GPA	Native	544	2.461	0.783	-4.09	1078	.01
	Reverse transfer	536	2.654	0.769			
Earned hrs. (area)	Native	543	33.938	21.497	3.93	1076	.01
	Reverse transfer	535	29.148	18.346			

Multiple Regression

A multiple regression analysis was made with the area school grade point average the dependent variable and the achievement data the independent variables. The regressions were made for: group 1, the native students entering the arts and sciences program; group 2, the reverse transfer students entering the arts and sciences program; group 3, the native students entering the vocational-technical programs; and group 4, the reverse transfer students entering vocational-technical programs (91). Stepwise analyses of regression of the dependent and independent variables are shown in summary Table 86. Correlations are shown for each regression according to the cumulative correlation they appear to have with the common dependent variate, area school grade point average. The purpose of the stepwise regression is to determine the most potent variables, and the data that should be gathered to be predictive for future use. The regression analysis for group 1, native students entering the arts and sciences program, indicates that the high school percentile rank is highly significant in predicting the area school grade point average a native student entering the arts and sciences program would achieve. This variable is closely followed by credit hours earned at the area school. The addition of one American College Test appears to increase the multiple R. The regression analysis for group 2, reverse transfer students entering the arts and sciences program, indicates the significant predictors of area grade point average to be the high school percentile rank, credit hours earned and American College

Table 86. Multiple correlation table showing the cumulative strength of predictor variables in each group

Dependent variable: Area grade point average							
Group 1		Group 2		Group 3		Group 4	
Native students entering arts and sciences		Reverse transfer students entering arts and sciences		Native students entering vocational-technical		Reverse transfer students entering vocational-technical	
	Mult R		Mult R		Mult R		Mult R
H.S. PCT.	.557	H.S. PCT.	.438	H.S. PCT.	.416	H.S. PCT.	.341
EQ. HRS.	.653	EQ. HRS.	.449	EQ. HRS.	.449	EQ. HRS.	.384
ACT 1	.671	ACT 3	.459	ACT 1	.517	ACT 4	.405

Test 3, Science.

The regression analyses for group 3, the native student entering the vocational-technical program, indicates that the high school percentile rank, area school hours earned and American College Test 1 (English) as significant predictors for the area college grade point average.

Group 4, the reverse transfer student entering a vocational-technical program would have the predictive variables of high school percentile rank, area school hours earned, and American College Test 4 (social sciences) to predict the area school grade point average.

Multiple Regression Analysis

Tables 87, 88, and 89 summarized the regression analyses in which the high school grade point averages and American College Tests were omitted because the data were not available for some of the students. The reader should note that these analyses include more cases than subsequent analyses that are to be described. This regression analysis gives values for predicting relationships with the dependent variables. An examination of this information indicates that the large number of students (N = 1845) present a very heterogenous group and there is more opportunity for sex, age and the other variables to come into the regular equation. It is much easier to predict with the large sample because of the variability that exists within the sample of 1845 students. Tables 87 through 89 omit the high school grade point average and the American College Tests. The information is discussed from that standpoint. The data in Table 87 are used to predict area school graduation. The age of the individual is highly

Table 87. Analysis of multiple regression using dependent variable 11: Area school graduation (omit high school grade point average and ACT tests)

Variation due to	DF	Sum of squares	Mean square	F ratio
Total	1844	696.390244		
Regression	14	291.231501	20.802250	
Residual	1830	405.158743	0.221398	93.9589

Multiple R square = 0.41820

Information concerning t values of the coefficients prediction equation

Independent variable no.		t value
1.	Entering status	2.4830
2.	Sex	1.9782
3.	Age	7.7564
10.	Program entered	6.0710
14.	Entering status x sex	0.8469
15.	Entering status x age	-3.7875
16.	Sex x age	-2.2026
17.	Entering status x program entered	-1.6254
18.	Sex and program entered	-2.6185
19.	Age x program entered	-6.1625
20.	Entering status x sex x age	0.6363
21.	Entering status x sex x program entered	-0.5229
22.	Entering status x age x program entered	2.7744
23.	Sex x age x program entered	2.4372
	Intercept	0.1796

Table 88. Analysis of multiple regression using dependent variable 12: Area school grade point average (omit high school grade point average and ACT tests)

Variation due to	DF	Sum of squares	Mean square	F ratio
Total	1844	2600.223693		
Regression	14	693.736299	49.552593	
Residual	1830	1906.487395	1.041796	47.5646

Multiple R square = 0.26680

Information concerning t values of the coefficients prediction equation

Independent variable no.		t value
1.	Entering status	0.0025
2.	Sex	2.9396
3.	Age	1.1422
10.	Program entered	2.2456
14.	Entering status x sex	-0.5010
15.	Entering status x age	0.3863
16.	Sex x age	-0.6643
17.	Entering status x program entered	1.3334
18.	Sex and program entered	-2.1967
19.	Age x program entered	-1.6132
20.	Entering status x sex x age	0.0446
21.	Entering status x sex x program entered	-0.4429
22.	Entering status x age x program entered	-0.4429
23.	Sex x age x program entered	2.1632
	Intercept	0.0888

Table 89. Analysis of multiple regression using dependent variable 13: Number of area school credit hours earned (omit high school grade point average and ACT tests)

Variation due to	DF	Sum of squares	Mean square	F ratio
Total	1844	1489308.222222		
Regression	14	221706.839165	15836.202798	
Residual	1830	1267601.383057	692.678351	22.8623

Multiple R square = 0.14887

Information concerning t values of the coefficients prediction equation

Independent variable no.		t value
1.	Entering status	0.0925
2.	Sex	3.4589
3.	Age	1.0208
10.	Program entered	1.4873
14.	Entering status x sex	-1.6723
15.	Entering status x age	0.2279
16.	Sex x age	-2.1625
17.	Entering status x program entered	1.0652
18.	Sex and program entered	-1.8260
19.	Age x program entered	-0.8766
20.	Entering status x sex x age	0.5941
21.	Entering status x sex x program entered	0.2178
22.	Entering status x age x program entered	-0.6865
23.	Sex x age x program entered	2.2176
	Intercept	0.2125

significant (.001). The positive t value (7.7654) indicates the older the person is the less likely they are to graduate. The program the student is entering is also highly significant. These variables are closely followed by age and program entered (.001). Thus the individual variables also interact at a highly significant level. Entering status x age x program entered is closely followed by the variable sex and program entered and entering status. These variables are all at or above the .01 level of significance and may be considered as very high predictors.

Examination of Table 88, predicting area school grade point average, shows that the sex, program entered, sex x program entered and sex x age x program entered are all significant beyond the .05 level. Viewing Table 89, prediction of area school college hours earned, sex emerges as highly significant beyond the .01 level. Sex x age and sex x age x program entered are all significant beyond the .05 level of significance.

Tables 90, 91 and 92 which summarize the regression analyses for all variables give t values for predicting relationships with the dependent variables which correspond to the appropriate table. The reader should note that these analyses include additional variables and less cases than the previous analysis. There are 795 cases that are not included. These are the students without the American College Tests or the high school grade point averages. The smaller number of students (N = 1050) makes it difficult to make predictions because the variability on certain variables tends to be much smaller in that sample of 1050. This sample also tends to be more homogenous with respect to the variables. In predicting graduation, Table 90, the high school grade point average is highly significant. The

Table 90. Analysis of multiple regression using dependent variable 11: Graduation

Variation due to	DF	Sum of squares	Mean square	F ratio
Total	1049	243.356190		
Regression	19	19.694170	1.036535	
Residual	1030	223.662020	0.217148	4.7734

Multiple R square = 0.08093

Information concerning t values of the coefficients prediction equation

Independent variable no.		t value
1.	Entering status	0.2863
2.	Sex	-0.6984
3.	Age	-1.3461
4.	High school grade point average	-4.1657
5.	ACT Test 1	0.0271
6.	ACT Test 2	2.3601
7.	ACT Test 3	-1.5109
8.	ACT Test 4	0.2761
10.	Program entered	-1.4254
14.	Entering status x sex	-1.0920
15.	Entering status x age	0.0864
16.	Sex x age	1.0152
17.	Entering status x program entered	-0.0572
18.	Sex and program entered	1.2901
19.	Age x program entered	2.0302
20.	Entering status x sex x age	0.7523
21.	Entering status x sex x program entered	1.4753
22.	Entering status x age x program entered	-0.8203
23.	Sex x age x program entered	-2.1341
	Intercept	2.0516

Table 91. Analysis of multiple regression using dependent variable 12: Area school grade point average

Variation due to	DF	Sum of squares	Mean square	F ratio
Total	1049	1016.173261		
Regression	19	205.342217	10.807485	
Residual	1030	810.831044	0.787215	13.7288

Multiple R square = 0.20207

Information concerning t values of the coefficients prediction equation

Independent variable no.		t value
1.	Entering status	-0.5700
2.	Sex	1.3854
3.	Age	1.8407
4.	High school grade point average	8.3471
5.	ACT Test 1	1.8930
6.	ACT Test 2	0.2565
7.	ACT Test 3	1.6387
8.	ACT Test 4	0.0715
10.	Program entered	2.6363
14.	Entering status x sex	0.7491
15.	Entering status x age	0.1606
16.	Sex x age	-1.3397
17.	Entering status x program entered	-0.0830
18.	Sex and program entered	-2.0856
19.	Age x program entered	-3.0434
20.	Entering status x sex x age	-0.4090
21.	Entering status x sex x program entered	-1.2063
22.	Entering status x age x program entered	0.9753
23.	Sex x age x program entered	2.3612
	Intercept	-1.6024

Table 92. Analysis of multiple regression using dependent variable 13: Number of area school hours earned

Variation due to	DF	Sum of squares	Mean square	F ratio
Total	1049	718348.999048		
Regression	19	63995.331310	3368.175332	
Residual	1030	654353.667738	635.294823	5.3018

Multiple R square = 0.08909

Information concerning t values of the coefficients prediction equation

Independent variable no.		t value
1.	Entering status	0.3463
2.	Sex	1.0900
3.	Age	2.2534
4.	High school grade point average	3.3427
5.	ACT Test 1	-1.5255
6.	ACT Test 2	-0.4471
7.	ACT Test 3	1.1349
8.	ACT Test 4	1.1902
10.	Program entered	3 4239
14.	Entering status x sex	1.2870
15.	Entering status x age	-0.8884
16.	Sex x age	-1.1839
17.	Entering status x program entered	-1.8335
18.	Sex and program entered	-2.3771
19.	Age x program entered	-4.0129
20.	Entering status x sex x age	-1.1319
21.	Entering status x sex x program entered	-0.8605
22.	Entering status x age x program entered	2.9833
23.	Sex x age x program entered	2.8205
	Intercept	-1.7237

American College Test 2 is also significant in predicting graduation. Sex and program entered is significant at the .05 level along with the combined variables sex, age and program entered.

In viewing Table 91, predicting the area school grade point average, the high school grade point average is highly significant beyond the .001 level. The combined variables age and program entered are significant at the .01 level. The program entered is significant (.01 level) and combined with sex x age x program entered is significant at the .05 level. Table 92 uses number of area school hours earned as the dependent variate. High school grade point average takes third place to the combined variable age x program entered and program entered although all three variables are significant at the .01 level. The variables age, program entered, sex and program entered, entering status x age x program entered, and sex x age x program entered are significant at the .05 level.

Table 93 represents a division of the total student sample used in the study. It includes the means of people who did not have reports on the American College Tests and a report on their high school grade point average (N = 795).

The other sample (N = 1050) represents means of students who had a complete report on all data.

Variable 1--entering status: Reverse transfer students made up 67% of the sample of 795 students compared to 41% of the sample of 1050 students. This is a difference of 26% between the two groups and represents a factor to be considered when reviewing the data.

Variable 2--sex: There was 30% of the sample of 1050 who were

Table 93. Means of all students (N = 1050) with all data reported and means of all students (N = 795) with no reported ACT tests and high school grade point average

Variable	No data reported N = 795 Means	All data reported N = 1050 Means
1. Entering status	1.6738	1.4071
2. Sex	1.4986	1.3035
3. Age	21.0913	21.2537
4. Program entered	1.2968	1.2271
5. Graduation	1.7487	1.5610
6. Area college grade point average	2.6736	2.2323
7. Area college hours earned	51.6206	35.889

female and 50% of the sample of 795 who were females. This indicated a much higher proportion of females in the sample that did not have ACT and high school grade point averages reported.

Variable 3--age: Very little difference was revealed; the sample group of 1050 had a mean of 21.25 and the sample group of 795 had a mean of 21.09.

Variable 4--program entered: There was 30% of the sample of 795 students compared to 21% of the sample of 1050.

Variable 5--graduation: In the sample of 1050 it appeared that 44% of the student group graduated and 25% of the sample of 795 students graduated.

Variable 6--area grade point average: In the sample 1050 there was an area grade point average of 2.23 while the sample student group of 795 had a grade point average of 2.67.

Variable 7--area college hours earned: The sample group of 1050 earned a mean average of 36 hours while the sample group 795 earned a mean average of 51.62.

These results appear to indicate that the sample of 1845 students who did not have reports on the ACT and the high school grade point average differ in many respects from the sample of 1050 students who did have the ACT and high school grade point average. The sample without this information had much higher t values for prediction of graduation, Table 87, based on the variables age, program entered and the combination age x program entered. In Table 93 the sample mean scores of 795 students when compared to the sample mean scores of the 1050 group consistently had higher mean differences.

DISCUSSION

The purpose of this study was to investigate the characteristics and achievement of the reverse transfer students enrolled in the Iowa area schools. The study compared the reverse transfer students with a like group of native students to see if there were any implications for the effectiveness of student services or needed curriculum changes because of differences in characteristics and achievements of the two student groups. The discussion was organized in three parts: part one, characteristics of the reverse transfer student as a group, by group x program and by group x program x sex; part two, a comparison of achievement by the reverse transfer and the native students; part three, a review of proposed hypotheses, prediction analysis of student groups and student profiles.

The review of the literature indicated a lack of research in the areas of characteristics and achievement. The Iowa area schools were relatively new institutions and it appeared that an evaluation of the characteristics and achievements of students in these areas would be of interest to the various groups having a responsibility with the area school.

A discussion of characteristics identified by the findings indicates that the Iowa area community college and vocational-technical institutes offer a wide variety of courses and operate under the open door policy. Students with many resources or few resources and many responsibilities and those from a number of socio-economic levels are served. The reverse transfer student body is composed of slightly over 75% full-time

students. Of these students, 35% enter the vocational-technical programs and 65% enter the arts and sciences program. The vocational-technical programs divide this 35% into a male-female population of 57% and 43% respectively, while the arts and sciences total of 65% is divided into a male-female population of 65% and 35% respectively. The male-female division in the vocational-technical area probably reflects the increasing number of programs to which women may orient, such as health, secretarial, and marketing programs.

Approximately 20% of the reverse transfer students obtain their information about the community colleges from other students. This source of information remained fairly constant even when divisions were made for the various programs and by male and female students.

The Iowa area schools are basically composed of white students. This ethnic division probably is a result of a state predominantly populated by white people. The community colleges in the urban areas of Iowa evidently do not attract the various ethnic groups in any large numbers. However, the federal emphasis on programs for the poor and minorities conceivably could have an impact in this area.

The reverse transfer students were significantly older than the native entering freshmen. The "older" trend reflected the fact that the reverse transfer student had been in college and had reverse transferred to the area school. Of the entire number of students studied, those in the 19 to 25 age group included 79.1% of the reverse transfer students. The age group 20-35 included 55% of the reverse transfer group.

The survey revealed that 239 (25%) of these students were married.

There were more than twice as many married arts and sciences students, 170 or 17.8%, as there were vocational-technical married students, 69 (7.2%). It was revealed that these groups, when divided by sex in each division, had more than a 2-1 ratio of married males when compared to married females in the vocational-technical programs. There proved to be an almost even division of married males and females in the arts and sciences program.

A comparative look at highest grade in school completed by the fathers and mothers generally indicated that more mothers did not complete grade school than fathers did; however, more mothers were graduated from high school, 464 (48.6%), than were the fathers, 364 (38.1%). More mothers had completed some college work, 150 (15.7%), but more fathers had graduated from college, 156 (16.3%).

A view of the family income of reverse transfer students reveals that the lower and middle income student makes up a large percent of the reverse transfer group. In the low income category (-$3000 to $5900) there were 442 students (44.2%) and in the middle income group ($6000 to $14,900) there were 342 students (36.5%) for a total of 784 students (80.7%) in these income groups. Serving the lower income groups is one of the principle objectives of the Area Community College and Vocational-Technical institutes.

The one-way distance traveled to school shows that the number of students decreases as the distance they travel to attend the school increases. There were 564 students (59.1%) who traveled fewer than 10 miles; those traveling 11-25 miles totaled 278 (29.1%); and those traveling

more than 50 miles totaled 113 (11.8%). The residence category of the reverse transfer students compared to the distance traveled by the students reemphasizes the commuter aspect of the area schools. The reverse transfer student group lived at home, 615 (64.4%), or roomed in private housing,324 (33.9%). The number living in dormitories hardly entered the picture because very few of the area schools have dormitories.

Plans for employment while in school show that slightly less than one-third of the reverse transfer students planned other employment while attending the community college. There were 500 (55.4%) students who planned to work from a few to 30 hours per week and 165 students (17.3%) who planned to work over 30 hours per week. This information, coupled with the family or student income, emphasized that the reverse transfer student group does not appear to have financial backing while attending college and must work, in many instances, an inordinate number of hours in addition to class work in order to attend school.

The most important reasons for the reverse transfer student group attending the area schools are: 1) programs offered, 2) cost of attendance, 3) other reasons, 4) close to home and 5) open door policy. There were 419 students (43.9%) who chose to attend the college because of the availability of a desired program. This category was followed by cost of attending the school, 219 students (22.9%); other reasons, 152 students (15.9%) and close to home, 125 students (13.1%). Male and female students entering the vocational-technical program were almost unanimous in choosing the college because of programs offered, 281 (29.4%). Students entering arts and sciences programs listed cost of attendance, 119

students (20.8%) as their first consideration. This category was closely followed by choice of varied programs, 138 (14.5%) and nearness to home, 113 (11.8%).

Reverse transfer students planning to seek employment in Iowa after finishing their program totaled 373 students (39.1%). Those students undecided about working Iowa numbered 488 (51.1%) with only 94 students (9.8%) indicating they would not seek employment in Iowa. More arts and sciences students, 229 (24%) than vocational-technical students, 144 (15.1%) indicated they planned to work in Iowa. The arts and sciences group also had the largest number of students who were undecided 326 (24.1%).

Slightly over one-half of the reverse transfer students, 555 (58.1%), said they would need no financial help from their parents. The arts and sciences students indicated they expect to get more help from their parents than do the vocational-technical students. The military veterans enrolled in the area schools number only 188 out of 20,000 plus students. There are 58 (17.4%) males and no females in the vocational-technical program and 125 (20.1%) male and 5 (0.8%) female students in the arts and sciences programs.

An attempt to assess the redirecting function provided by the area schools for the reverse transfer students revealed that the area schools are serving the needs of reverse transfer students with an open door policy and are trying to absorb and help the reverse transfer students plan towards a number of career options. The numerous vocational-technical courses are offering many career choices to the reverse transfer students.

Many of these students are enrolling in the various programs and are achieving above average in credit hours earned and grade points earned. The reverse transfer students in arts and sciences are completing their Associate in Arts degree, 156 students (26.6%) compared to the native student graduation, 138 students (22.9%). The number of reverse transfer students completing a vocational-technical program totaled 136 students (54.4%), and there were only 137 (48.2%) of the native students who did so. A view of the reverse transfer students who were graduated follows: out of a total of 836 students, 292 students graduated (34.9%) and 544 students (65.1%) did not. Viewing the native student who graduated, we find: out of a total of 886 students, 275 students graduated (31.0%) and 611 students (69.0%) did not. Many of the reverse transfer students transfer back to a four-year school before completing a two-year Associate in Arts and Sciences degree. Many of the students in vocational programs are employed before they complete the diploma or Associate in Applied Sciences degree.

Recommendations

This study could be replicated to cross validate the procedure and to provide an ongoing study of this aspect of the area schools.

This type of information should be made available to counselors since the reverse transfer student represents a good average student in search of something he or she did not find at the four-year institution.

The horizontal articulation within and between the post high school institutions, vocational-technical institutions, community colleges and

four-year colleges and universities should be a priority item. Student migration should be considered and every effort made to facilitate transfer of the students' credits so they are most applicable to any new career approaches.

Variables identified as having predictive qualities should be used by the counselors as an additional tool in counseling students. From the regression analysis of variance one can discern from the data that age and program entered become potent variables in predicting graduation. Age and program entered looked at independently and jointly indicate that the arts and sciences students shall do well. The reverse transfer students are more likely to graduate than the native students. Other things being equal, the older people in vocational-technical programs tend to graduate and younger people in arts and sciences programs do not.

Increased attention to the needs of the part-time students should be considered, and all the various available media to enhance educational opportunities for this group should be utilized.

The reverse transfer students who are marginal academically, should be counseled toward some of the appropriate career programs in the vocational-technical areas.

The open door policy when applied to a program or curriculum should be vigorously supported by administrative commitment to excellent counseling and thoughtful advising by the student services and the faculty. This should help prevent the "open door admission" from becoming the students' "democratic right to fail."

SUMMARY

The problem of this study was to investigate the characteristics and achievement of the reverse transfer students enrolled in Iowa Area Community Colleges and Vocational-Technical Institutes. The study compared them with the native students to see if there were any implications for counseling or curriculum change because of diffrences in characteristics and achievements of the two groups of students. The ability of the area schools to redirect the reverse transfer students and the direction taken by these students was studied. Multiple regression analyses were used to identify variables with predictive relationships for area school graduation, area school grade point average and area school credit hours earned by the native and reverse transfer students.

The sample was based on two sources of information relating to the students that enrolled in an area school during 1971-72. The Student Characteristics Questionnaire formed the basis for the study of student characteristics. The 955 reverse transfer students identified from the Student Characteristics Questionnaire were matched with a comparable number of native students chosen by computer random sort. This randomly selected native group and the reverse transfer group of students was used in the study of student achievement. The student characteristic information was made available by the cooperation of the Area School Division, Iowa State Department of Public Instruction. The student achievement information was obtained from the Student Services Division of each area school. In order to research the academic achievement of the students,

they were divided into the reverse transfer student group and the native student group. Each of these groups was further divided by sex into those students entering vocational-technical or arts and sciences programs. The study compared the native student and the reverse transfer student in areas of student characteristics and student achievement to see if there were any implications for counseling or curriculum change because of differences in the characteristics and achievements of the two student groups. This was done by using a frequency distribution and percentage format for the student characteristics. The student achievement was studied by the use of frequency distributions, an analysis of means, standard deviations, correlation techniques, multiple regression statistical analysis and t tests. Seventeen variables were used in the student characteristics study. The student achievement variables varied from eight to eighteen.

A variety of statistical procedures including multiple regression were used. The variables used were: sex, age, high school grade point average, high school percentile class rank, American College Tests in English, mathematics, social sciences, natural sciences and a composite score of the four tests, area school grade point average and area college credit hours earned. The null hypotheses were: Null Hypothesis 1: There are no significant differences between the reverse transfer and native students based on the group means as measured by each of the dependent and independent variables. The null hypothesis was rejected as the results indicated significant differences in the two groups. Null Hypothesis 2: There are no significant differences in the group means of the reverse transfer students entering vocational-technical or those entering arts and

sciences programs as measured by each of the dependent and independent variables. Null hypothesis 2 remained tenable. Null Hypothesis 3: There are no significant differences in the group means between the reverse transfer students entering vocational-technical programs and the native students entering the vocational-technical programs as measured by each of the dependent and independent variables. Null hypothesis 3 was rejected indicating differences at the .01 level of significance on eight of the variables. Null Hypothesis 4: There are no significant differences in the group means between the reverse transfer students entering the arts and sciences programs and the native students entering the arts and sciences programs as measured by each of the dependent and independent variables. Null hypothesis 4 was rejected because the results indicated significant differences for all variables except two.

A multiple regression analysis was made with the area school grade point average the dependent variable and the achievement data the independent variables. A stepwise analysis of regression indicated the strongest independent variables available for use in counseling future students regarding their achievement in the area school. The regressions were run for: group 1, the native student entering the arts and sciences program; group 2, the reverse transfer students entering the arts and sciences program; group 3, the native students entering the vocational-technical programs and group 4, the reverse transfer students entering vocational-technical programs. An additional stepwise multiple regression analysis was made using the dependent and independent variables to identify influential variables relating to area grade point average and

area school credit hours earned. An attempt to assess the redirecting function provided by the area schools for the reverse transfer students revealed that the reverse transfer student had a slightly better record for graduating or completing a program than did the native students. Of the fathers, 39.9% had graduated from high school; 12.3% had some college and 11.4% had graduated from college. Of the mothers, 48.6% had graduated from high school; 15.7% had completed some college and 14.2% were college graduates. Of the reverse transfer students, 81% came from the low to middle income bracket. The students not planning to work while in school equaled 30% of the total; 52.4% planned to work fewer than 15 hours to 30 hours per week while 17.3% planned to work more than 30 hours per week. The reverse transfer students who were undecided about working in Iowa after graduation equaled 51% while 39% were going to stay and work in Iowa. There were 58.1% of the students planning to pay all their expenses.

The reverse transfer student achieved a higher area school grade point average than he did as a high school student. The students enrolled in vocational-technical programs consistently earned more hours and had a higher area school grade point average than the students enrolled in the arts and sciences division. The entire reverse transfer student group had an upward mobility at almost all levels on the area school grade point average scale.

A profile of the native students according to the data would be as follows: There were no significant differences in the number of native male and female students enrolled in the area schools. There were more full-time native students (84.6% compared to 79%) than reverse transfer

students enrolled. There were predominantly white students (95.9%) between 17 and 22 years of age. Approximately 71% of the native students were unmarried. Almost two students entered the arts and sciences program (1.8%) for each student entering the vocational-technical programs. The native students heard about the area schools from their high school or college counselors (31.2%) and then from other students (22.5%). Students traveling less than 10 miles to attend the school equaled 62.2% while 68% lived at home or in a private room (26.2%). Of the fathers, 39.9% had graduated from college. Of the mothers, 52.4% had graduated from high school, 10.2% had completed some college and 9.3% were college graduates. The students (84.4%) came from the low to middle income bracket. Students not planning to work while attending college equaled 34.6%; 50.1% plan to work from less than 15 hours to 30 hours per week while 15.3% plan to work more than 30 hours per week. The native students who were undecided about working in Iowa after graduation numbered 49.4% while 42.7% were going to stay and work in Iowa. There were 41.8% of the students planning to pay their entire school expenses.

The native students enrolled in vocational-technical programs had a mean high school grade point average of 2.38, compared to a mean high school grade point average of 2.51 for those students in the arts and sciences programs. The native students consistently scored lower on the American College Tests than did the reverse transfer students.

BIBLIOGRAPHY

1. Bakrow, William. Projection of enrollments for fifty-one public and private junior and senior colleges and universities in Iowa. 1960-1970. Study no. 1 of Resources and Needs for Higher Education in Iowa. Directed by Raymond C. Gibson. Des Moines, Iowa: State House, Iowa Legislative Research Bureau, 1960.

2. Balick, Gerda M. Socio-economic profile of credit students in the North Carolina Community College system. Washington, D.C.: U.S. Department of Health, Education and Welfare, 1961.

3. Barton, Clark R. The open door college. New York, New York: McGraw-Hill, 1960.

4. Beckes, Isaac K. The case for community colleges. Junior College Journal 34 (April 1964): 24-30.

5. Berger, E. M. Vocational choices in college. Personnel and Guidance Journal 45 (1967): 888-894.

6. Blocker, Clyde E. The two year college: A social syntheses. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965.

7. Bogue, Jesse P. The community college. New York, New York: McGraw-Hill Book Company, Inc., 1950.

8. Bogue, Jesse P. The needs of junior colleges in an expanding role. Junior College Journal 28 (February 1958): 305-306.

9. Bolman, Frederick deW. New opportunities in articulation. Junior College Journal 36 (1966): 20-23.

10. Carnegie Commission on Higher Education. New students and new places. New York, New York: McGraw-Hill, October 1971.

11. Carnegie Commission on Higher Education. The open-door colleges. New York, New York: McGraw-Hill, June 1970.

12. Caryle, Irving E. The governor's commission on education beyond the high school. Raleigh: State of North Carolina, 1962.

13. Casey, John W. An appraisal of the public community colleges in Iowa. Unpublished Ph.D. thesis. Ames, Iowa, Library, Iowa State University of Science and Technology, 1963.

14. Clark, Burton R. The open door college: A case study. New York, New York: McGraw-Hill, 1960.

15. Collins, Charles C. Junior college student personnel programs--what they are and what they should be. Washington, D.C.: American Association of Junior Colleges, 1967.

16. The Committee for Economic Development. The management and financing of colleges. New York, New York: Committee for Economic Development, October 1973.

17. The comprehensive community college system in North Carolina. Raleigh: Department of Community Colleges, 1967.

18. Cramer, Dean W. Factors affecting transfer of students entering the arts and sciences division of Iowa Central Community College during the years 1963, 1964, 1965. Unpublished Ph.D. thesis. Ames, Iowa, Library, Iowa State University of Science and Technology, 1971.

19. Crane, Robert M. Manpower problems and higher education in Iowa: A case study. New York, New York: McGraw-Hill, 1960.

20. Cross, K. P. Higher education newest student. Junior College Journal 39 (1968): 38-42.

21. Cross, K. P. The junior college student: A research description. University of California, Berkeley, The Center for Research and Development in Higher Education, and The American Association of Junior Colleges. Princeton, New Jersey: Educational Testing Service, 1968.

22. Dissertations in progress. Dissertations completed. Junior College Journal 42, no. 1 (1971): 28-34.

23. Eells, Walter C. The junior colleges. New York, New York: Houghton Mifflin Co., 1931.

24. Eells, Walter C. Why junior college terminal education? Washington, D.C.: American Association of Junior Colleges, 1941.

25. Fields, Ralph R. The community college movement. New York, New York: McGraw-Hill, 1962.

26. Fleming, Donald A. A study of first time, full time, arts and science students of 1966 in sixteen Iowa public community colleges. Unpublished Ph.D. thesis. Ames, Iowa, Library, Iowa State University of Science and Technology, 1972.

27. Focus on the transfer program. Junior College Journal 35 (1965): 5-9.

28. Follow-ups of the junior college transfer student. Junior College Research Review 1, no. 1 (February 1967). 6 pp.

29. Gibson, Raymond C. An appraisal of Iowa colleges: Facilities, costs, scholarships and administration. Study no. 3 of Resources and Needs for Higher Education in Iowa. Des Moines, Iowa: State House, Iowa Legislative Research Bureau, 1960.

30. Gibson, Raymond C. The junior colleges of Iowa. Study no. 4 of Resources and Needs for Higher Education in Iowa. Des Moines, Iowa: State House, Iowa Legislative Research Bureau, 1961.

31. Gibson, Raymond C. Resources and needs for higher education in Iowa, 1960-1970: A summary report. Des Moines, Iowa: State House, Iowa Legislative Research Bureau, ca. 1961.

32. Gleazer, Edmund J., Jr. American junior colleges. 6th ed. Washington, D.C.: American Council on Education, 1963.

33. Gleazer, Edmund J., Jr. Our emerging profile. Junior College Journal 34 (May 1964): 3-4.

34. Gleazer, Edmund J., Jr. This is the community college. Boston, Massachusetts: Houghton Mifflin Co., 1968.

35. Glenny, Lyman. Pressures on high education. College and University Journal Reprint 12 (September 1973): 4.

36. Harris, Norman C. Technical education in the junior college: New programs for new jobs. Washington, D.C.: American Association of Junior Colleges, 1964.

37. Havighurst, R. J., and Newgarten, Bernice L. Society and education. Boston, Massachusetts: Allyn and Bacon, 1957.

38. Henninger, G. Ross. The technical institute in America. New York, New York: McGraw-Hill, 1959.

39. Henry, Raymond S., Jr. Academic behavior of students who transferred from a baccalaureate college to a community college because of low academic records. Unpublished Ph.D. thesis. Toledo, Ohio, Library, University of Toledo, 1969.

40. Hoyt, Donald P. Description and prediction of diversity among junior colleges. Personnel and Guidance Journal 46 (1968): 997-1004.

41. Hoyt, Donald P. Predicting grades in two-year terminal programs, an experiment in predicting the college ability of non-academically oriented students. Junior College Journal 36 (1966): 20-23.

42. Illinois Council on Articulation. Mobility, academic status and curricula. Choices by institutional type of Illinois undergraduate transfer students. Illinois Council on Articulation Preliminary Report #1, 1970.

43. Iowa Cooperative Study of Post High School Education. Proposal for progress. Iowa City, Iowa: State University of Iowa, 1967.

44. Iowa Department of Public Instruction. Education beyond high-school age: The community college. Des Moines, Iowa: State of Iowa, 1962.

45. Iowa Department of Public Instruction. Iowa's developing pattern for area schools. A paper developed by the Department of Public Instruction with an attached statement by the area school superintendents. Des Moines, Iowa: State of Iowa, 1968. (Mimeo.)

46. Keppel, Francis. Standards of excellence. Junior College Journal 34 (September 1963): 8-11.

47. Kintzer, Frederick C. Admission of students to California public junior colleges who are in academic difficulty at the University of California. College and University 41 (1966): 221-230.

48. Kintzer, Frederick C. Articulation is an opportunity. Junior College Journal 38 (1968): 16-19.

49. Knoell, Dorothy M. Articulation between two-year and four-year colleges. Junior College Journal 35 (1965): 5-9.

50. Knoell, Dorothy M., and Medsker, Leland L. Factors affecting performance of transfer students from two to four year colleges. Berkeley, California: University of California, Cooperation Research Project 6, 1964.

51. Knoell, Dorothy M., and Medsker, Leland L. From junior college to senior college: A national study of the transfer student. Washington, D.C.: American Council on Education, 1965.

52. Koos, Leonard V. The junior college movement. New York, New York: Ginn and Company, 1925.

53. Kuznik, Anthony E. A study of the reverse transfer student: Policies regarding his transfer, factors influencing his decision to transfer, changes he made in his educational and vocational plans, and his success after transfer. Unpublished Ph.D. thesis Iowa City, Iowa, Library, University of Iowa, 1971.

54. Kuznik, Anthony E., Maxey, James E., and Anderson, Duane D. Reverse transfers: A survey. Junior College Journal 44 (1974): 25-26.

55. Lagomarcino, Virgil S. An appraisal of the public junior colleges in Iowa. Unpublished Ph.D. thesis. Ames, Iowa, Library, Iowa State University of Science and Technology, 1955.

56. Lee, Glenda Ellen Henasy. "Reverse transfer"--the retread function of community colleges. Unpublished Ph.D. thesis. Ann Arbor, Michigan, Library, University of Michigan, 1971.

57. Lonning, Philip E. Characteristics of full-time students enrolled in Area II and Area V Community Colleges. Unpublished Ph.D. thesis. Ames, Iowa, Library, Iowa State University of Science and Technology, 1969.

58. McConnell, T. R. A general pattern for American public higher education. New York, New York: McGraw-Hill, 1962.

59. McKibben, E. F. Round two for college dropouts. Junior College Journal 37 (1966): 22-25.

60. Meadows, M. E., and Ingle, R. R. Reverse articulation: A unique function of the junior college. College and University 44 (1968): 47-54.

61. Medsker, Leland L. Cooperative action among two-year and four-year colleges; opportunities and obstacles. Education Record 39 (1958): 114-121.

62. Medsker, Leland L. Diversity, a fact and a responsibility. Junior College Journal 28 (May 1958): 505-513.

63. Medsker, Leland L. The junior college: Progress and prospect. New York, New York: McGraw-Hill, 1960.

64. Medsker, Leland L. The junior college student. Junior College Student Personnel Programs. A report to the Carnegie Corporation from the National Committee for Appraisal and Development of Junior College Student Personnel Programs. New York, New York: Carnegie Corporation, 1965.

65. Medsker, Leland, and Trents, James W. The influence of different types of public higher institutions on college attendance from varying socioeconomic and ability levels. Berkeley: University of California, 1965.

66. Metcalf, Alan W. Community college student characteristics. Olympia, Washington: State Superintendent of Public Instruction, 1965.

67. Midwest Research Institute. Iowa higher education enrollment projection. Kansas City, Missouri, 1973.

68. Moench, Charles R. Policies governing . . . area schools in Iowa. Education Bulletin. Des Moines, Iowa: Iowa Department of Public Instruction, March 1968.

69. Morse, H. T. Between the ivory tower and the market place. Junior College Journal 35 (1965): 16-20.

70. Muirhead, Peter P. The junior college must assist in an important way to discharge society's obligation to put higher education within financial reach of all qualified students. Junior College Journal 31 (May 1961): 513-518.

71. Nelson, James A. Guidelines for articulation. Junior College Journal 36 (1966): 24-26.

72. Newsham, Louis R. "Iowa sets its course." In R. Yarrington (ed.), Junior colleges: 50 states/50 years. Washington, D.C.: American Association of Junior Colleges, 1969.

73. O'Connell, Alfred C. The open door college: A license to fail. Junior College Journal 21 (January 1961): 241-242.

74. O'Connell, Thomas E. Community colleges: A president's view. Urbana, Illinois: University of Illinois Press, 1968.

75. O'Connell, Thomas J. Follow-up studies in junior colleges: A tool for institutional improvements. American Association of Junior Colleges Bulletin 123, 1965.

76. Parker, Franklin. Community junior college, enfant terrible of American higher education: A bibliography of 225 doctoral research dissertations. Junior College Journal 32 (December 1961): 193-204.

77. Parker, Franklin; Bailey, Anne; and Ogilvic, William K., compilers. The junior and community college: A bibliography of doctoral dissertations, 1918-1963. Washington, D.C.: American Association of Junior Colleges, 1965.

78. Popham, James W. Educational statistics. New York, New York: Harper and Row, 1967.

79. President's Commission on Higher Education. Higher education for American democracy. Volume I: Establishing the goals. Washington, D.C.: Government Printing Office, 1947.

80. Preus, Paul K., and Swain, Jerol B. Open doors for reverse transfer students. Junior College Journal 44 (February 1974): 27-29.

81. Richards, J. M., Jr.; Rand, L. P.; and Rand, L. M. Description of junior colleges. Journal of Educational Psychology 57 (1966): 207-214.

82. Roueche, John E., compiler. A bibliography of doctoral dissertations 1964-1966. Washington, D.C.: American Association of Junior Colleges, 1967.

83. Simon, L. S. The cooling out function of the junior college. Junior College Journal 45 (1967): 973-978.

84. Snedecor, G. W., and Cochram, W. G. Statistical methods. 6th ed. Ames, Iowa: Iowa State University Press, 1967.

85. Starrak, James A., and Hughes, Raymond M. Community college in the United States. Ames, Iowa: Iowa State College Press, 1954.

86. Sterrett, W. Study of transfer students at Muscatine Community College. Unpublished report. Muscatine, Iowa: Muscatine Community College, 1971.

87. Summerskill, John. Drop outs from college. In Nevitt, Sanford (ed.), The American College. New York, New York: John Wiley and Sons, 1962.

88. Thornton, James W., Jr. The community college. New York, New York: John Wiley and Sons, 1973.

89. Tillery, Harry Dale. Differential characteristics of entering freshmen at the University of California and their peers at California junior colleges. Unpublished doctoral dissertation. Berkeley, California, University of California, 1964.

90. Trent, J. W., and Medsker, L. L. Beyond high school. San Francisco, California: Jossey-Bass, Inc., 1968.

91. Wert, James E.; Neidt, Charles O.; and Ahmann, J. Stanley. Statistical methods in educational and psychological research. New York, New York: Appleton-Century-Crofts, Inc., 1954.

92. Willingham, W. W., and Findikyan, N. Transfer students: Who's moving from where to where, and what determines who's admitted? College Board Review 72 (1969): 4-12.

93. Winstead, William M. Factors related to the academic careers of students who have transferred from senior colleges to two junior colleges in California. Unpublished Ph.D. thesis. Berkeley, California, Library, University of California, 1966.

94. Wise, Max W. They come for the best of reasons. College students today. Washington, D.C.: American Council on Education, 1958.

95. Wolins, Leroy. The use of multiple regression procedures when the predictor variables are psychological tests. Educational and Psychological Measurement 27 (1967): 4.

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Thanks to my wife, Ruth, a most patient lady.

APPENDIX A: LETTERS AND STUDENT CHARACTERISTIC QUESTIONNAIRE

IOWA CENTRAL COMMUNITY COLLEGE

180a

330 AVENUE "M" FORT DODGE, IOWA 50501

May 29, 1973

Director, Student Services
Iowa Area Community Colleges

Dear Sir:

I am trying to complete a study that will identify the 1971 reverse transfer students and their achievements in the area schools. (This is a student who attended some other post high school institution and then transferred back to one of the area schools).

These reverse transfer students enrolled in 1971 and for the most part are graduating at the end of this year. Would you be willing to fill out an achievement sheet on these students and a matching group sometime during June? I'm getting a list of the reverse transfer students from the State Student Characteristic Questionnaire and the computer is picking a random sample from the students who enrolled from high school directly to an area school. A numbering system can be used to insure the privacy of the individuals files.

The procedure I propose is as follows: After graduation this May or June each area college would be requested to fill out the achievement questionnaires. I don't have a grant for this study; however, I will pay for secretarial time used in filling out this information where the college can't absorb it.

I'm currently working on the first half of the study--a study of the characteristics of the reverse-transfer student. This information is already available through the Student Characteristic Questionnaire. I think this study shall give the area schools some ammunition for saying, "how good we are," at "retreading" or providing an opportunity for change in career education for the student who reverse transferred in the fall of 1971. This, plus a descriptive socio-economic look and some comparisons of the student groups, should have implications for guidance and planning both at the high school and community college levels.

Sincerely yours,

L. R. Newsham

L. R. Newsham, Director
Arts and Sciences

:jaj

6100-B29604-5/73

STATE OF IOWA • DEPARTMENT OF PUBLIC INSTRUCTION
GRIMES STATE OFFICE BUILDING • DES MOINES, IOWA 50319

Iowa
a place to grow

ROBERT D. BENTON, Ed.D., STATE SUPERINTENDENT
David H. Bechtel, M. A., Administrative Assistant
RICHARD N. SMITH, Ph.D., DEPUTY SUPERINTENDENT

DATE: May 30, 1973

TO: Area School Superintendents

FROM: Area Schools Division

SUBJECT: Reverse Transfer Study

We would appreciate your cooperation in the collection of information that is required to complete a study on reverse transfer students. This study is explained in the enclosed letter from Robert Newsham, Director of Arts and Sciences at Iowa Central Community College.

We feel your cooperation in assisting in this study will be most helpful in providing additional information on one of the important functions of area schools. In the past, we have frequently asserted that area schools assist a student population that is somewhat older and with a much more diverse background than the lower division population of many four-year institutions of higher education. This study will provide substantiation for this statement and will also provide staff of area schools with additional information on our success in assisting the reverse transfer student.

We sincerely hope you will cooperate with Mr. Newsham in the collection of this information. The completed study will be made available to both the state agency and interested area schools.

Sincerely,

Charles R. Moench, Director
Area Schools Division

CRM:ds

Enc.

STUDENT CHARACTERISTIC QUESTIONNAIRE

Fall, 1971

Dear Student:

The following questionnaire is being completed by all area community college students. The plan is to develop a composite description of students attending community colleges. This information is very important to future plans on the state and local levels. Please answer all 24 questions on both pages.

Thank you.

INSTRUCTIONS

Please fill out the Student Charcteristic Questionnaire according to the following instructions. Each numbered question has a corresponding numbered instruction. PLEASE PRINT AND ANSWER ALL QUESTIONS -- DO NOT OMIT ANY QUESTIONS.

Column (1-4)

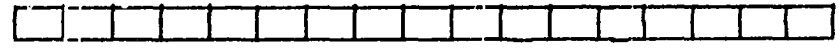
1. | 9 | 9 | 0 | 5 | School Number
2. | | | | | Campus
3. Insert the code number of your program from the list of programs.

Campus	
Fort Dodge	= 1
Webster City	= 2
Eagle Grove	= 3

Program	Code Number
Arts and Sciences (College Parallel-Including Law Enforcement and Educational Aide)	9999000000
Associate Degree Nursing	0702040000
Auto Mechanics	1703020000
Broadcasting	1715990000
Clerical Office Education Program (EG)	1403030000

Clerical Office Occupations (WC)	1403030000
Clerical Receptionist	1403030000
Dental Assistant	1701010000
Elevator and Farm Supply Management	0102030000
Executive Secretary Program	1407010000
Farm Power and Equipment Mechanics	0103010000
Fashion Merchandising	0403010100
Food Marketing Management	0401050100
Industrial Electronics	1601080000
Machine Shop	1723020100
Mechanical Drafting (Machine)	1713030000
Medical Assistant Education	0702990000
Practical Nurse Education	0702050000
Retail Marketing Management	0401070100
Secretarial Office Occupations (WC)	1407020000
Service Station Mechanic	1703020100
Welding	1723060000

(16-35) 4. Insert name. Put in your last name, first name, and middle initial, in that order. Leave one space between last name and first name and one space between first name and middle initial. If you cannot get all of your first name and middle initial in the space, use your first initial and middle initial.



5. Mark the one box that pertains to you upon entering this institution this term.

1	New Student
2	New Student: Transferring from other Institution
3	Student Returning to Institution - Same Program
4	Student Returning to Institution - New Program

(37) 6. Mark your present status.

1	Full-time (12 or more credit hours)
2	Part-time (Less than 12 credit hours)

Column

(38) 7. From what source did you receive information about this institution? Mark the most appropriate box.

1	Parent	7	Admissions Counselor of Institution
2	Employer	8	High School Counselor
3	Other Student	9	Vocational Rehabilitation
4	Welfare Agency	10	High School teacher
5	Employment Office	11	Other
6	Radio, Newspaper, or T.V.		

(39) 8. Sex. Mark one box.

1	Male	2	Female

(40) 9. Ethnic Group. Mark one box.

1	Afro-American (Black)
2	American Indian
3	Caucasian (White)
4	Oriental
5	Spanish Surnamed American (Chicano, Cuban, Puerto Rican)
6	Other

(41) 10. Age. Ma your present age category.

1	17 years and below	6	26 - 35
2	18	7	36 - 45
3	19	8	46 - 55
4	20 - 22	9	56 - 65
5	23 - 25	10	66 years and over

(42) 11. Mark your marital status. Mark one box.

1	Single	4	Widowed
2	Married	5	Separated
3	Divorced		

(43) 12. Mark the highest grade you completed before entering this institution.

1	Grade School or Less
2	Some High School - Did Not Graduate
3	High School Graduate
4	High School Equivalency Certificate
5	Post High School Work

(44) 13. Mark the highest grade your father completed.

1	Grade School or Less
2	Some High School - Did Not Graduate
3	High School Graduate
4	High School Equivalency Certificate
5	Some College - Did Not Graduate
6	College Graduate
7	Do Not Know

(45) 14. Mark the highest grade your mother completed.

1	Grade School or Less
2	Some High School - Did Not Graduate
3	High School Graduate
4	High School Equivalency Certificate
5	Some College - Did Not Graduate
6	College Graduate
7	Do Not Know

(46) 15. Please indicate your total family income or your income if you are entirely self-supporting.

1	Under $3,000 per year
2	$3,000 to $4,999 per year
3	$5,000 to $5,999 per year
4	$6,000 to $7,499 per year
5	$7,500 to $8,999 per year
6	$9,000 to $11,999 per year
7	$12,000 to $14,999 per year
8	$15,000 to $17,999 per year
9	$18,000 and over per year
10	Do Not Know

Column

(47) 16. Mark the distance you travel to class each day. (One-way)

1	Less than 10 miles	3	26 to 50 miles
2	11 to 25 miles		More than 50 miles

(48) 17. Mark your residence category while attending school.

1	Live at Home
2	Room Away from Home in Private Housing
3	Reside in Dormitory

(49) 18. Mark your plans for employment while attending this school.

1	No employment
2	Employment of 15 Hours or Less Per Week
3	Employment of 16 to 30 Hours Per Week
4	Employment of More Than 30 Hours Per Week

(50) 19. Mark the one most important reason for attending this school.

1	Close to Home
2	The Cost is Relatively Low
3	This School Had a Particular Type of Program in Which I was Interested
4	Open Door Admissions Policy of School
5	Other

(51) 20. Do you plan to be employed in Iowa when you complete school?

1	Yes	2	No	3	Undecided at this time

(52) 21. Do you expect to receive any financial assistance while attending this institution?

1	Yes	2	No

If above answer was yes, please check as many resources as apply to you.

(53) [1] Veteran's Administration
(54) [2] Veteran's Rehabilitation
(55) [3] Scholarship (Non-Government Sponsored)
(56) [4] Loan (Non-Government Sponsored)
(57) [5] Government Assistance Program (Such as Economic Opportunity Grant, Work-Study, Guaranteed Student Loan, National Defense Education
(58) [6] State of Iowa Scholarship Program
(59) [7] Vocational Rehabilitation
(60) [8] MDTA
(61) [9] W. I. N.
(62) [10] Welfare Agency
(63) [11] Social Security or Other Retirement Plans

(64) 22. How much of the cost of this years educational expense do your parents contribute?

[1] Parents make no contribution
[2] Less than 25%
[3] 26% - 50%
[4] 51% - 75%
[5] 76% - 100%

(65) 23. Are you a veteran?

[1] Yes [2] No

24. Indicate the code number of the Iowa County or the state in which your permanent residence is located. Refer to the attached code list. If you are a foreign student, put in the number 256 and print the name of your country on the line below.

[ ][ ][ ]
66 - 68

_____
Foreign Country
(69 - 80)

APPENDIX B: STUDENT ACHIEVEMENT RECORD

* "NATIVE"

Student Achievement Record

Name: Number _____

1. Sex: 1. Male 2. Female (Circle One)

2. Age: _____

3. High school cumulative grade point average: _____

4. High school class rank: _____

5. High school class size: _____

AMERICAN COLLEGE TEST (ACT) Standard Scores

6. ACT, Test number 1 - English _____
7. ACT, Test number 2 - Mathematics _____
8. ACT, Test number 3 - Social Studies _____
9. ACT, Test number 4 - Natural Sciences _____
10. ACT, Test number 5 - Composite Score _____

11. Program entered: (Check One) 1._____Arts & Sciences
2._____Vocational-Technical

12. Graduated or completed the program: 1. Yes 2. No (Circle One)

13. Area college cumulative grade point average:_____

14. Area college cumulative hours earned:_____Qtr.Hrs. or Sem.Hrs.
(Circle One0

*NATIVE: A student who entered an area school directly after high school graduation.

* REVERSE TRANSFER

STUDENT ACHIEVEMENT RECORD

Name: Number _____

1. Sex: 1. Male 2. Female (Circle One0

2. Age: _____

3. High school cumulative grade point average: _____

4. High school class rank: _____

5. High school class size: _____

AMERICAN COLLEGE TEST (ACT) Standard Scores

6. ACT, Test number 1 - English _____
7. ACT, Test number 2 - Mathematics _____
8. ACT, Test number 3 - Social Studies _____
9. ACT, Test number 4 - Natural Sciences _____
10. ACT, Test number 5 - Composite Score _____

11. College attended after high school graduation: (List name)

    1. 4-year college or university _____

    2. Community college _____

    3. Trade or technical school _____

12. College or V/T cumulative grade point average: _____

13. College or V/T hours earned: _____ 1. Qtr.Hrs. or 2. Sem.Hrs. (Circle One0

14. Area community college transferred to: _____

15. Program entered: (Check One) 1. _____ Arts and Sciences 2. _____ Vocational-Technical

16. Graduated or completed the program: 1. Yes 2. No (Circle One)

17. Area college cumulative grade point average: _____

18. Area college cumulative hours earned: _____ Qtr.Hrs. or Sem.Hrs. (Circle One)

* A student who entered a post high school institution directly from high school and who subsequently reverse transferred to an area school.

APPENDIX C: SOURCES OF REVERSE TRANSFER STUDENTS ENROLLED IN IOWA AREA SCHOOLS DURING 1971-72

Table 94. Sources of reverse transfer students enrolled in Iowa area schools during 1971-72

	Number of students	Adjusted frequency (percent)
University of Northern Iowa	72	9.0
University of Iowa	61	7.7
Iowa State University	93	11.7
Iowa private 4-year colleges and universities	108	13.6
Out of state 4-year colleges and universities	248	31.0
Community college or vocational-technical schools	215	27.0
Others - no information available - not reported	158	--
Total	955	100.0